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ABSTRACT

This theme issue focuses on skills and qualifications in future world markets in general and in the Single Market within the European Community (EC). The first two articles are "Anthropocentric Production Systems: Advanced Manufacturing is Based on Skilled People" (Werner Wobbe) and "New Skills or a New Concept of 'the Job'"? (Enrique Retuerto de la Torre). Two interviews follow, one with Alain d'Iribarne, the creator of a French jobs directory, and Juergen Allesch, who provides advice and technical support to German small and medium-sized enterprises. Other articles include the following: "Jobs, Skills, and Training Needs in Spain" (Jose Manzanares Nunez); "Description and Classification of Qualifications" (Laszlo Alex); "The Nature of Skills: Their Specific Features and Their Analysis" (Olivier Bertrand); "What Do We Mean by Skills?" (Mateo Alaluf); "New Educational Strategies for Moulding Our Future" (Sergio Bruno); "Qualifications: A Social Construct" (Jacques Delcourt); "Steps in Constructing Statistical Comparisons of Stocks and Flows of Certificated Vocational Skills in the UK (United Kingdom) and Other EC Member States" (Hilary Steedman); "Evolution of Qualifications" (Burkart Sellin); and "Training and the Labour Market: The Use of Data for Decision-Making" (Jose Rose). Twenty-one pages of information sources, organized by 11 sponsoring organizations, are provided. These include annotations of print materials; information and addresses and telephone numbers of organizations, networks, information sources, and projects; and updates on research in progress. (YLB)

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Qualifications for a changing world

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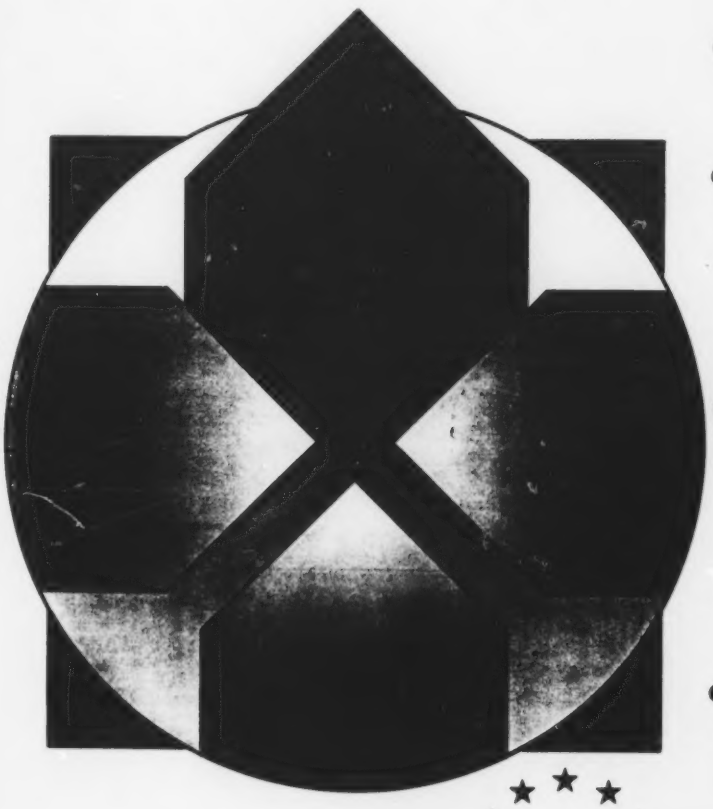

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Dear Readers,

The challenge of international competition is forcing businesses to make continuing efforts to modernize, and the management of human capital is a key factor in that process. New manpower management strategies, changes in the organization of work and the substantial increase in investment in training all bear testimony to employers' growing interest in human resources.

This interest may in a sense seem paradoxical, in that the introduction of new technology might have been expected to diminish the importance of the human factor (after all, it led to redundancies on a massive scale), but at the same time it is understandable when one looks at the changes in the organization of labour that new technology has often brought in its wake. Now that repetitive tasks are automated, the work that is left is more "intelligent", and in theory the human factor has been upgraded.

Investment in human capital is inextricably linked with the constraints upon businesses – productivity, quality and innovation – forcing them to seek an optimum return from their administration of existing skills on both internal and external labour markets. The emphasis is thus placed on the ability of basic and continuing training systems to respond to changing patterns of demand.

The training systems themselves, however, contend with the twofold problem of having to meet social needs, which are broader than the immediate needs of employers (individuals must retain their mobility options on the labour market), while at the same time responding appropriately to the needs of the economy. They must take account of both social and economic demands, being well aware of the constant, rapid changes in those demands and recognizing that existing analytical resources are not yet sophisticated enough to keep pace with them.

There is, then, a twofold challenge:

- Are we capable today of creating tools specifically geared to planning?

- Could we expect to optimize the return on human capital without planning?

To meet this dual challenge, we have to define the skills needed by businesses and individuals now and in the future if they are to stay competitive. This brings us on to another question: how are skills generated today, and in the light of what terms of reference?

Let us think about "skills". What does this general term imply? The set of skills required in specific jobs (and here the skills are not clearly codified – nor, indeed, are they easy to codify). Do we mean the skills an individual acquires throughout his life by virtue of his experience in society and at work and from his training (and part of that training is unused in his job and is therefore difficult to measure)? Or are we talking about skills as classified in gradings, the outcome of compromise between the two sides of industry?

It is recognized that the concept of skills (whatever their level) is not as simple as the post-war industrial period might have led us to believe. That concept is becoming increasingly complex as the social and economic "demand" evolves, extending to include forms of expertise beyond the traditional idea of job skills. There is a growing economic demand for social, methodological and practical expertise, and the concept of the transferability of skills and experience (the relationship between the specific and the general) is a matter of growing concern for both individuals and employers.

The mechanisms for building up this complex structure are still being planned, however, and it will be some time before the instruments for its evaluation are available.

The complexity underlying the term "skills" is the reason for some of the methodological difficulties encountered in the use of existing observation methods:

- How can the various dimensions of skills be restructured and their components measured?

- How can each level of the decision-making machinery be provided with information that is appropriate, relevant and, despite the complexity it reflects, straightforward and transparent (usable by the different parties concerned)?

- How detailed should that information be if international comparisons are to be feasible, and how abstract can it be without becoming unusable?

- With the blurring of dividing lines between occupations, what scope is there for hard-and-fast classifications?

- What system of nomenclature should be used so that international comparisons are feasible in practice?

- What are the advantages and drawbacks of the approach now being planned?

- Do the resources for observing the changing pattern of skills take account of what is happening in the economic, social and cultural environment?

- How is the value of a skill to be assessed, since it is determined by the laws of supply and demand?

- Lastly, has an assessment of the existing tools been made, giving a clear idea of their specific contribution to the management of the labour market, human resources management, vocational guidance, the planning of training, pay negotiations, statistics, etc? Can the existing tools provide clarification and consensus as to key concepts such as qualifications, skills, key skills, expertise, professionalism, trades, occupations, job profiles, training reference systems, job reference systems, the classification of trades, etc?

Such distinctions are hard enough to make at national level, but they are highly complex at Community level, where a clear perception is needed of the different concepts, bearing in mind that they are not ideologically neutral. The European Community also needs a reference system and appropriate analytical tools in order to comprehend the changes taking place in the labour market and then draw up guidelines for training policy.

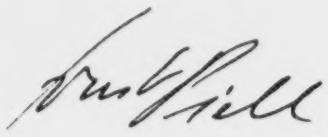
The Single Market will allow the free movement of workers in Europe, one as-

sumption being that an international labour market will have to be managed and related to local, regional and national labour markets, each retaining its own special features and historical influences. At the micro-economic level, the mobility of citizens in Europe presupposes that individuals will have to market their nationally-acquired skills internationally; this will call for reference systems ensuring that at the very least such skills are transparent.

It is against the background of these concerns that CEDEFOP is investing in the development of analytical instruments that can underpin a European policy on training.

It should be pointed out in this context that one of the tasks of the Centre as laid down in its Statutes is:

"to encourage and support any initiative likely to facilitate a concerted approach to vocational training problems. The centre's activity in this respect shall deal in particular with the problem of the approximation of standards of vocational training with a view to the mutual recognition of certificates and other documents attesting completion of vocational training".



Ernst Piehl
Director of CEDEFOP

Anthropocentric production systems: advanced manufacturing is based on skilled people

The author argues that the debate about qualification planning has to start from certain assumptions about future world markets and the transformation of the economy influenced by customized quality products. These outcomes have dramatic consequences for manufacturing organization and the demand for qualifications. A new manufacturing paradigm has therefore arisen which, in contrast to those of the 80's, is no longer centred around new technology development. Technology can therefore no longer be taken as a point of reference for the demand for qualification.

Advanced manufacturing in the 90's will be based on new integrated concepts with skilled personnel and collaborative organizational structures to which technology will have to adapt. These new concepts are "Anthropocentric Production Systems".

Qualifications, as an aspect of human resource development, are understood as a strategic variable for improving the competitve force of the European Communities. This is the assumption on which Community programmes such as COMETT, EUROTECNET II and now FORCE are based. Industrial competitiveness is the main justification for Community action in the field of education and training. Nonetheless, developments in education and training are not seen as being of value in themselves for strengthening the Community. They are perceived as a subordinate means for coping with the challenge of modern technologies in manufacturing, services and administration. Up to now, technology has therefore held the prime position in the Commission context when considering the driving forces behind competitiveness. Other elements will be adjusted accordingly to support the introduction, application and smooth running of technologies.

This article sets out to question the subordinate role of education and training, or qualification development, which leads, in turn, to examining the leading edge technology is accorded when looking at competitiveness, and, consequently the welfare of the Community. The author's view is that advanced manufacturing in the 90's is mainly based on skilled people, and the collaboration of people in the factory to which technologies will have to adapt, or be developed. The principles for this view are embodied in the concept of "Anthropocentric Production Systems" (APS)[1]. In the framework of this concept, qualification development has to adhere to a broad, basic education and to further education if required by the new manufacturing processes and products. Development of competency in the workshop is a key issue, which is no less important than development of management and engineering skills.

Werner Wobbe
MONITOR/ FAST programme, Commission of the European Communities

New Market Development and Changing Production Paradigms

In order to discuss the issue of societal demands for skills and qualifications in manufacturing, services or administration, assumptions about market and product trends have to be explored. All too often in the past the mass production model of car manufacturing has been used as an example of how manufacturing activities will end up in the future (Warner et al., 1990) Therefore the different categories of labour with its high division of tasks and professions and its differentiations have been taken for granted: the repetitive production works – staying in competition with machines to carry out their tasks – the control personnel of automated facilities, the maintenance workers, the planners, programmers, product and production engineers, etc. Low priced products only seemed to be guaranteed by this form of production organization.

Today, "one-of-a-kind" production, even for complex products such as cars, does not just seem to exist in a fantasy world. Customers are demanding both personalized and quality products. Niche markets are expanding and the markets in general are becoming more segmented. Consequently, manufacturing has to become more flexible to allow for more change over shorter product life cycles, etc.

The example from BICC, the British electrical goods producer, does not stand alone. Figure 1 shows the development of the product variation over a certain period of this firm. Over the last 20 years the trends have accelerated against a stable long-

term product situation. The variety of products has increased dramatically. The decreases have been in the product life cycle, repeat orders and batch sizes. These developments are contrary to what traditional microeconomists consider hold prices down in a mass production organization.

The trends in consumer choices are amplified for the manufacturing organization by new logistic principles like just-in-time and zero-stock operations. Therefore, all suppliers for original product manufacturers are compelled to dovetail their orders and be more flexible in their organization.

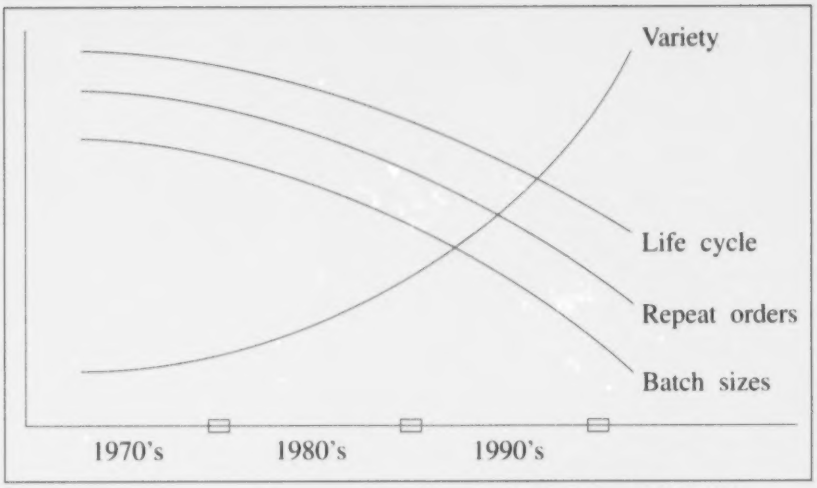


Figure 1: Market Trends; Source:P. Kidd (1990)

Flexible Technology

During the 70's, a technological vision emerged which is still influencing the thinking of a lot of managers and designers. The assumption was that increased flexibility demands could be dealt with mainly by modern technology[2]. The computer-based technologies should give the potential flexibility required. The idea was that by making technology more flexible, factory organization would automatically become more flexible. In following this line of reflection robots, Flexible Manufacturing Systems, Computer integrated Manufacturing, Computer Aided Design, etc. have been developed and deployed. Finally, these so-called flexible technologies have contributed through high automation to more rigid structures of work and factory organization instead of achieving more flexibility (Fix-Sterz et al., 1987).

The Productivity Paradox

The outcome of the massive investment in new technology in the 80's was a productivity paradox, and, in microeconomic terms, heavy misinvestment. Some estimates on this are as follows:

- Misinvestment in material resource planning was estimated in 1990 at DM 100 million in Germany (E. Hildebrandt), because a proper functioning of the systems was not achieved.
- An established manufacturer of FMS in Germany has refused to deliver systems to clients who do not provide proper training and work organization because he does not wish to gain a bad reputation, should the systems fail to operate properly through lack of this provision (F. Manske).
- Also, with regard to the UK, indications of high failure rates with FMS and production planning systems have been reported (Lawrence, Haywood, Bessant).
- The biggest car producer in Europe will not increase its level of automation in the final assembly. On the contrary, priority is being given to experiments in group work.
- The ILO estimated in 1987 that 30% of all CAP/CAM Systems were abandoned within the first year of installation.
- A Danish study (Gjerding et al., 1990) confirmed that in the mid-80's Denmark witnessed a strong growth in production, investments and employment, but productivity in manufacturing was falling, contrary to the forecasts of economists. The reason for this was judged to be the "technological fascination" of mangement. Management put so much emphasis on the power of new technology for solving problems, and far less on the labour force, management and training, to the detriment of productivity.

These developments, the shift from mass markets towards more diversified customer and quality oriented markets and the productivity paradox have stimulated new manufacturing concepts which place qualifications and organization at the core of production systems, and by doing so ensure an in-built learning organization in manufacturing.

The In-built Learning Organization

If responsiveness to new market requirements is to be achieved, the existing organizational structures of manufacturing are challenged at all levels. Innovation in flexible manufacturing and product quality is no longer the domain of production and design engineers: it is the subject of all collaborators within the plant – from design to the shopfloor and vice versa.

Continuous improvement and innovation has to be ensured by the organization itself: it has to be **in-built**. Therefore, a plant has to be organized as a **learning organization**, as a steady upgrading process. This cannot be provided by technology: a) either by flexible technology or b) by so-called artifical intelligence. Continuous improvement can only be assured by the mobilization of all the knowledge and skills of the workforce and the organization which assures the collaboration, motivation and participation of all the employees.

The base to build upon is a well educated workforce. Therefore, education and training have become a main issue.

We call this in-built learning organization "Anthropocentric Production Systems" (APS).

They are being implemented in increasing numbers in the different European countries, industries and types of enterprise (F. Lehner, 1991).

Elements of Anthropocentric Production Systems

Anthropocentric Production Systems (APS) have been conceptualized to overcome the above-mentioned problems and means to modernize European manufacturing. APS are based on skilled shopfloor people who control the technology. This is no longer the privilege of the white-collar worker. The work organization consists of the following principles (T. Charles et al., 1991):

- the unity of conception and execution of work;
- decentralized decision-making;
- flat hierarchies;
- collaboration between engineers and workers;
- skill-enhancing job designs;
- interaction between design departments and the executive level.

These principles, which firstly appeal to the work organization of an enterprise, its management structure and its industrial culture, also provide guidelines for technological development. In order to achieve these principles, technology has to follow these collaborative production structures from the workshop to the design and planning departments. Software principles are challenged and particular requirements are needed for the technology.

Anthropocentric Production Systems can be perceived as a **complete model of a factory**, integrating all aspects of organization, people and technology. However, the system is composed of different elements and encompasses various levels of the factory. These elements stretch from the individual man-machine level to the collective level: from the **workplace** to the **working group**. We can also identify the **technical tools**, as well as the "**organizational tools**" to be deployed in Anthropocentric Production Systems.

The Workplace

The individual workplace has to permit optimum use of the skills of the worker. It also has to guarantee development and learning possibilities, so that motivation is challenged, as well as innovation and ingenuity, and that tacit knowledge and experience can be put into operation. This means that the work has to be holistic with a selection of tasks. For a machine operator in the engineering industry this involves planning, programming, sequential decisions of executive work, maintenance, quality responsibility, communication and collaboration tasks. In order to guarantee this structure, the factory work organization has to ensure that both this and the technology is suitable.

The APS requirements for the workplace can be applied, for example, in the discrete parts production, for machine tools, in the assembly areas, in the process industrie, on the shopfloor, but they also have implications for the technical offices and apply to administrative workplaces.

Group Work

It is advantageous to embed workplaces in a team structure to gain cooperative advantages. The group structure is built systematically around collaborative synergies. Group work allows decentralized decisions. In particular, the work scheduling and capacity utilization plays a strong part in group concepts allowing flexible adaptation. Group work already has a long tradition an assembly areas of car production, in production islands for concrete parts, particularly with product families, as well as in Flexible Manufacturing Systems, in design islands or administrative functions.

Technical Tools

Although the central part of the agenda of APS involves changes in the work organization, the technology has to be adapted or has to aid the form of organization chosen. This concerns the workplace, when, for example, programming has to be carried out on the shopfloor. Then an adequate system has to be provided, or, if a group has to make autonomous decisions in planning and scheduling, then the system has to support these decisions and provide interfaces for the general planning system. In the same way, the communication between the design offices and the shopfloor has to be guaranteed so that not only the designer downloads his data to the shopfloor, but also the other way round. The software ergonomic has to provide procedures so that the user of information systems can work with his traditional logic and not vice versa, which would compel him to learn the logic procedures of the system. The technological system has to

Ullstein

be adapted to the experience and knowledge of the user of the system.

"Organizational Tools"

The traditional division of work in its hierarchical structure and high specialization of jobs has led to rigidity, quality problems and low productivity. The traditional forms of organization are nowadays deeply rooted in industry and the heads of industrial management. It has become a weak industrial culture.

The steps for change start with the redesign of production facilities. The new organization aims at holistic, cooperative work structures with flat hierarchies. These structures require new management procedures and participative structures to unfold their productive strength. The introduction of APS has therefore to be understood as a process which is based on cooperative industrial relations and personnel participation. The employees have to be educated and trained in a continuous process and the management has to understand and provide these processes.

Conclusions

APS are advanced manufacturing systems which have been perceived as a contribution to the modernization of the productive body of Europe[3]. They aim at the optimum utilization of human resources by their integration into a collaborative and skill-based factory and work organization with decentralized decision centres and flat hierarchies aided by advanced technologies. The system integration of people, technology and organization offers superior results in productivity, flexibility and innovation. APS improve the manufacturing base for a customized production of quality goods and quick responsiveness to changing markets.

Although APS can be regarded as a superior economic manufacturing organization to the traditional one, it is not expected that production structures will be accordingly transformed to APS principles. The manufacturing process organization is embedded in the different national production cultures of Europe. While the Scandinavian, German, Swiss, Dutch collaborative industrial cultures are in accord, the patrimonial Mediterranean and conflictual Anglo-Saxon ones are less open to change.

The need to develop qualifications which support APS is of strategic importance for the modernization of Europe. Therefore the discussion about qualification demand should be oriented towards the APS approach and not the technological features, which will change in the course of development and will be finally adapted to assist employees in carrying out their tasks.

In so far as vocational training and education are crucial prerequisites for APS, the Community Member States have to adapt and revise their actions in relation to education. General principles for this are outlined as follows:

- A sound base of general education plus training should be provided;
- Education and training for a lifetime of learning;
- Developing social skills for group working;
- Learning by doing;
- Open learning;
- A psychology of the learning-driven approach to the development of multimedia learning technologies;
- Broadening of skills and knowledge.

A concentration of education towards the skill level of a technician based on practical experience will be particularly important. To attain this skill level, practical experience has to be merged with new technical knowledge, manufacturing experience and tacit knowledge. Broad-scale educational measures have to become the core action activity for the 90's. A paradigmatic standard is set by the reform of the new industrial occupation profiles in Germany which provide a broad base on general knowledge to the profession and have shifted away from narrowly specified job profiles. This broad technical focus ensures that qualifications are provided by education and training to cope with the requirements of advanced manufacturing purposes and for Anthropocentric Production Systems.

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[1] The MONITOR-FAST Programme of the Commission of the European Communities has run a two-year research activity on the assessment of perspectives for anthropocentric production systems in the CEC and worldwide. Of the 25 reports completed, see in detail P. Kidd (1990), F. Lehner (1991), S. O'Siochru (1990), F. Rauner, K. Ruth (1990), D. Brandt (1990), W. Wobbe (1991).

[2] The problems with the traditional reasoning have been criticized already by Kern and M. Schumann (1984).

[3] In contrast to "lean production" a debate on which emerged at the end of 1990 (Womack et al. 1990), APS can be regarded as a concept rooted in the European manufacturing culture, but which tries to aim at similar objectives.

New skills or a new concept of "the job"?

The evident interest of political decision-makers in the development of human resources and the growing investment in vocational training are normally explained by reference to :

- ***the need to expand shares in world markets in goods and services, through product innovation and on the basis of a more flexible organization of production processes;***

- ***the consolidation of the Single Market within the European Community, with the inevitable passage through the search for technical solutions to objectives of social and economic unity.***

In this Single Market, the potential mobility of members of liberal professions and of employees (especially those whose occupational profiles are "cross-sectoral") can be expected to form a fundamental factor in occupational training policies.

Demography is another factor which will ensure the dominance of certain strategies among those who take decisions. Population forecasts for the countries of the EC indicate stability in absolute terms over the next twenty years, with all that that implies by way of reduced numbers of young people entering the labour market, greater opportunities for women and longer stays on the labour market for those currently in work.

Along with this greater stability in the working population and greater mobility for certain occupational groups we can expect a new approach to skills and training, depending on various factors which currently serve as a reference for all those who study skill requirements and which, for that reason, I shall limit myself to listing here.

The constant innovation demanded by markets in goods and services (leading to shorter production runs and increased investment in the design and finishing stages) requires great flexibility in the organization of work, with workers moving horizontally within large functional areas – design and planning, manufacture or service delivery, quality control, marketing – between which there is a large measure of permeability.

Occupations and occupational trends

Occupations and occupational skills are developing in a way which will alter workers' profiles within the present decade. The greater relative role of intellectual elements in occupational knowledge and skills (resulting from the universalization of complex technologies) and the increasingly cross-sectoral nature of that knowledge are other decisive factors in the new approaches to occupational skills and training.

I do not believe that entirely new skills are involved here, given that the developing cross-sectoral occupations are essentially performed by people trained in mechanical, electrical and electronic engineering. What is involved rather, taking into account the factors mentioned, is a new way of entering such occupations.

Across wide functional areas of manufacturing industry growing importance will attach to knowledge of mathematics and computer programming, of physics and mechanics, of electrical engineering and electronics, of new conductors and chemistry and of ergonomics and the durability of materials; in the case of the service sector workers will need knowledge of information technology, sociology, economics or law. But economics is also involved in the calculation of manufacturing costs, which may vary depending on the materials used; sociology offers guidance on how to work in groups of different kinds; ergonomics is involved in the interpretation of plans; and information technology is beginning to play a part in all the processes of quality control.

Once those who construct training provision have to pass from occupational knowledge to occupational practice, there are as many options for apprenticeship as there are families of jobs in functional fields. It is of course occupational experience which provides guidance among these many options. In this regard "apprentice" and "teacher" move from the general – registered as occupational knowledge – to the particular, to what confers expert status.

This "continuum", in which it is difficult to separate what is learned in school from what is learned on the job, is shaping a new way of understanding skills and their acquisition. In all probability the rigid boundaries of the past between general education and initial and continuing vocational training will lose their strength, as the following signals indicate.

Albeit with differing levels of study and with differing impulses due to differing cultural traditions, the Member State of the European Community are showing increasing interest in forms of initial training with vocational components

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("prevocational education"); technical school-leaving diplomas are gaining ground at the expense of traditional academic qualifications; notions of the culture of work and enterprise are being introduced into educational curricula at all levels, from primary schools to the universities; and growing value is attached to alternance as a formula for vocational apprenticeship in areas where it did not formerly exist.

In the world of business, what continues to be regarded as economic demand for skills encompasses capabilities which were once the exclusive province of academic education. That basic knowledge of a scientific and technical nature to which I have referred is believed to make individuals more receptive to the knowledge based on occupational experience which they will accumulate throughout their working lives.

In this new approach to skills and their acquisition, in short, a dominant role is played by joint action: individuals start from a basic apprenticeship which public educational institutions are bringing closer and closer to the world of business, and workers begin to shape their occupational career on the basis of this foundation and thereafter construct it through a permanent process of negotiation, either with whole segments of the labour market (the role of employers' and unions' sectoral organizations) or within their firm.

Machinery for consultation and negotiation regarding the content of vocational training and for its certification exists in practically all Community countries, albeit with different levels of institutionalization.

The individual dimension in the new perception of work

In this new assessment of "the job" in the relations between employers and unions, and in a post-industrial society in which greater leisure time is a source of personal enrichment, workers face situations which demand of them – at least conceptually – vocational knowledge comparable to that of the traditional craftsman, that is, an approach to their work which starts from an understanding of the processes involved as a whole and in relation to one another: design and marketing, manufacture and quality control, customer profiles and service delivery, etc.

In this perspective workers acquire greater autonomy in shaping their skills, while employers need to give greater backing than in the past to the market "versatility" of more complex skills. Naturally employers seek broad-spectrum vocational profiles which they can apply to different organizational options within their firms, but at the same time – paradoxically – they resist investing directly in the less specific components of those profiles because by their very nature they are somewhat elusive.

In any event, both employment factors (part-time working, temporary contracts, the growth in women's employment, the growing proportion of older workers in the labour force) and the increasing value placed on intellectual knowledge and know-how are producing a situation in which those of working age find themselves forced with increasing frequency to update their vocational skills or acquire new ones.

We also need to try to measure how and with what degree of influence on productive processes workers' occupational characteristics (their particular occupational knowledge and skills) are one of the factors – perhaps the most crucial – in the improvement of those processes. Once again we see in this approach to the theme of the interpretation of "the job" the retrieval in our time of that earlier conception of work in which individuals felt themselves to be active subjects in its performance.

Is vocational training following the same route as the new concept of occupational skills?

All the indications are that the institutional machinery of vocational training is making adjustments aimed at meeting the new demands of the labour market. But on what indicators is it basing its forecasts? How can it meet increasingly fluid demands with the help of training routes which tend to become rigid?

Interview with Alain d'Iribarne

CEDEFOP: A few years ago you were one of the originators in the creation of a French jobs directory. Does your Répertoire français des Emplois still reflect the current situation? If you were starting all over again today, what changes do you think you might make?

A. d'Iribarne: Various bodies today are in the process of producing the equivalent of a directory of their trades. The approach is the same: a number of standard jobs are defined on the basis of which job families are created, and these job families are in turn used for individual and collective purposes. Collectively, the whole is used as nomenclature and individuals are then categorized in various groups, the aim being to ease the transition from one job to another. When used individually, the aim is of course to place each person in relation to these standard jobs, but it is also to place people's particular work and thus to define what might be the occupational targets in individual careers.

In format these efforts are fairly close to the former *Répertoire des Emplois*. In practice, however, they differ in a number of respects. The main difference, I feel, is that standard jobs are defined not by experts but by a company's employees in the workplace, the people directly involved in the job families under investigation. The significance is that it brings together people who are regarded as being inter-related, helping them to discover a whole system of references and vocational activities that pertain to them. These reference systems are generally mutually implicit, which means that people find it extraordinarily difficult to relate different systems to each other since, in the final analysis, they are not talking about the same things.

For example, the references may be systems of nomenclature or the job titles used in traditional trades where each one is expressed in its own vocabulary. They may be the job classifications used in a collective labour agreement, or perhaps the terms used for pay slips, coded together with other particulars. All this information is pooled by the various people concerned, and they start to talk about what they do in practice. In talking about what they do, in trying to explain the salient features of their work and how one job differs from another or, on the contrary, how it resembles another, the people involved are engaged in something that admittedly is not very scientific in form, since it entails no conceptualization beyond the standard categories with which each person is in contact, but it is a joint effort with a strong element of socialization. What ensues helps to answer the first question raised by an index of jobs: what is important in a job analysis today? Is it the scientific rigour of experts or is it the fact that groups of people are capable of coming together and agreeing to designate something in terms common to them all? Personally, I would say that the ability to arrive at a shared designation is probably of growing importance, given that all our attempts at a scientific approach to the analysis of work up to now have left us with the feeling of having failed to achieve our object. And one question that might be asked is whether it may not be the very concept of a scientific approach to work that creates the problem. Should we not regard with caution the attempt to make a science of the approach to work? I am not answering the question, but putting another question in return, looking at things in a relatively empirical, pragmatic way. What is more important today: to be sidetracked by concepts that we are unable to construct, or – using concepts that may in the final analysis be limited and slightly hackneyed – to create the means whereby the parties concerned can take over the work themselves and engage in a collective effort to pool the information?

If we feel that the second alternative is more important, we must then say why. In my opinion, the reason is that the main point is to produce sets of landmarks for ourselves, just like in geometry or astronomy, to help individuals and groups see themselves in relation to the career paths they would like to follow. By this I mean the paths taken both in changing the nature of work and in personal work itineraries or training itineraries. The path that people would like to take today tends to be towards gaining recognition that the content of a job is variable (and ultimately is less formalized than is generally admitted), and therefore a certain number of main landmarks is enough. These main landmarks help with the placement of people in work in what are predominately learning situations.

CEDEFOP: What do you mean by "predominantly learning situations"?

A. d'Iribarne: We are back to the concept of knowing *how* to do things: it is by *doing* a piece of work, even in an informal manner, that one builds up the ability to do a real job.

Some time ago, I had to work on setting up expert systems. The main problem in this field is to extract expertise from the people regarded as experts and then to incorporate that expertise in a formalized system that can be used by others.

To their despair, the people who tried to distil this expertise realised that only in highly formal, simple situations does the

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Each worker's occupational profile is constructed and modified day by day in an interaction with the appropriate labour-market segment. On the vocational-training market there has been explosive growth on the supply side (a study by D. Blondel, commissioned by the French National Plan in 1991, puts total spending on training in France at over FF 400 000 million a year); preparation for particular jobs is no longer dominant, even though for the great mass of workers their only vocational qualification is still of the job-oriented type. In this situation, what will be the main components of this "multicoloured" structure of vocational training and skills?

On the one hand there is the certainty that the new inflow into the labour market will be made up of people whose entry will be facilitated by broader-based training provision, while on the other hand massive retraining efforts will be needed for those already in work.

Our media talk of training methods which will allow the management of training by the individual worker (individualized, modularized and distance training). The firm is again seen as the privileged setting for updating skills, without sufficient cost/benefit studies being available of in-firm training activities which go beyond simple preparation for the job and without it being known to what extent training affects the different categories of worker – in short, without any research having been done into the relationship between the initial and final profiles of workers undergoing training processes within firms.

Importance of information on the composition of occupational skills

Certain reference elements which provide a starting point for the construction of occupational skills and training can however be researched. We need to seek the appropriate reference components to:

- express elements through which skills and skill acquisition can be recognized by those involved in vocational training;
- transfer to the sphere of labour bargaining the employer's concrete requirements, expressed in terms of "capacities to perform ..."; and
- serve as a basis of reference enabling workers to build and present their occupational careers (in a labour market which is becoming sectorally and geographically more flexible) in such a way that their occupational knowledge and experience can be exploited in the course of that occupational mobility which is one of the European Community's goals.

In processing the information which is to serve these ultimate aims, one of the fundamental initial hypotheses is this: the measure of skill acquisition which was given in the era of manufacturing industry by certain parameters related to work processes which were always manifest and observable (the individual's empirical know-how related to the job's main components) is turning into a complex of personal capacities which are not always easily defined. The acquisition of occupational skills will thus in time come increasingly to depend on factors which are not found mainly in occupational experience or in approved training curricula but which result from the complex mix of general knowledge, vocational know-how and attitudes which – as we have seen – today make up "the job" (see also S. Bruno's article in this number).

The scope for defining "intangible capacities", coupled with the various formulas for specifying intellectual knowledge in the right relationship to knowledge acquired empirically, is at the heart of the concerns of those who plan and design training and of those with responsibility for vocational guidance.

At the same time, the process of rendering transparent, case by case, the complex of skills which individuals will increasingly have to display also provides a foundation on which, in the flexible and international market to which I have referred, economic demand (from firms) and social demand (from workers) for skills and skill training can come together.

This is why the EC Commission, with a view to the application of the Single Act, the maintenance of external competitiveness and the free movement of workers, has decided to give priority to general directives on the recognition of qualifications relating to occupations which require higher-level training (Directive 89/48 EEC, concerned with a general system for the recognition of higher-education diplomas, was the first to be approved), together with those others, at other levels, whose exercise is tied to the possession by the worker of a certificate which is officially valid in his or her country of origin. With regard to technical activities aimed at clarifying the position concerning formal qualifications acquired through vocational training and skills gained on the job (without formal certification), in 1989 the Commission asked CEDEFOP to investigate comparative information mechanisms which will allow the analysis of the jobs of the near future.

In this connection there already existed the programme on the comparability of vocational qualifications (Decision 85/368/EEC, Council of Ministers), which compares the content of **certificated training** for skilled workers. CEDEFOP's recent work on occupational profiles ("Vocational Training", No. 3, 1989; CEDEFOP) and their development by functional area seeks to determine common and differing elements in the activities or tasks making up occupations and the skills needed to perform them; it represents a further attempt at Community level to facilitate the "coming together" – mentioned earlier – of the individual's occupational career, employer requirements and, as a correlate, the response of the vocational-training system.

Interest in the updating of occupational classifications and descriptions is evident at both national level, with the proliferation of surveys and indexes of jobs and skills, and international level (the revision of SEDOC and the ILO occupational classification are good examples); it is shared by representatives of employers and unions in their dialogue at Community level. All these objectives come together in the search for instruments which can help reconstitute occupations and skills, on the basis of a "people-centred" approach which seeks not to fit individuals to their work but rather to allow individuals and their occupational skills to influence the nature of that work.

expert take an analytical approach that he could express in terms which could be communicated to others. The majority of experts, including skilled workers, are incapable of explaining the basis for their expertise, and furthermore their expertise is not analytical but is what one might call "holistic", in other words expertise created by alchemy (in the pre-scientific sense of the word): experts have learned how to take the overall view of a chain of complex acts of intervention in reaction to fairly informal events. In other words, what makes an expert expert is his global ability to decide on a chain of acts of intervention that will be effective in trying to solve a problem, the problem itself being fluid and evading definition. If this view can be accepted (and in my opinion there are quite a few interesting things to investigate along these lines), no form of work analysis can as yet amount to more than devising a simple set of landmarks. Genuine skill acquisition (what we might call the acquisition of expertise) is probably achieved through this process of alchemy as the individual grapples with his day-to-day work. The inference is that it is in an actual situation, and probably in a critical incident situation, that individuals and groups acquire the ability to deal with chains of critical incidents. I feel that the critical incident aspect is very important, because it means that expertise is acquired through exercises in solving problems under the pressure of constraint, the sort of time and risk constraint that forces every individual in such moments to summon up a whole series of actions into his memory at high speed. In other words, the contention is that it is the need for action that obliges the mind to question and interpret, and it is the interplay between this questioning/interpreting process and action that produces the process of learning.

CEDEFOP: You have said that people need systems of landmarks and a way of formalization, even though such formalization may be very simple. On the other hand, you are now talking about an informal system that is difficult to incorporate into a system of common references. How can one integrate this non-formal component, which it seems is becoming so important, into a system of landmarks that can be formalized?

A. d'Iribarne: The idea of integrating the non-formal component into a formal system is an idea that should be dropped in the current state of the art. It juxtaposes two unmatchable systems: the formal system, a simple system that is used to find one's bearings in collective dealings – and therefore one that is close to the processes of socialization – and the informal system, the system of referring expertise to what is done in practice in the workplace. This is the system known in French by the terms *qualification* or *compétence* – "skills" or "competence".

CEDEFOP: What do you think is the difference between the French terms "qualification" and "compétence"?

A. d'Iribarne: I have used the two terms indiscriminately because I am incapable today of defining the difference between them. People have often put this question to me. I simply say that I can define the difference between the two terms if I express them in the negative. Let us say that the opposite of *qualifié* – skilled – is *non-qualifié* – unskilled – and that the opposite of *compétent* (competent) is *incompétent* (incompetent). To say that somebody is unskilled normally means that the person, in doing his job, is at a low level (when referring to a sort of hierarchy based on the difficulty of a job), whereas someone who is incompetent is a person who is not capable of doing his job. On the other hand, etymologically, in French the word *qualifier* means "to designate". When one says about somebody that he is *qualifié* it means in this context that this person is capable of designating the nature of his job. Etymologically, therefore, *qualifié* means being capable of designating. At this juncture we are wandering into another register in approaching the concept of *qualification*. The upshot is that I no longer have any idea of the conceptual differences between "skills" and "competence". All I can say is that the reason why the concept of *compétence* was invented in France must have been to show that it is an attribute relating purely to the individual, whereas in the case of the term *qualification* there used to be a debate in the mid-1970s on "*qualification du travail*" – job-related skills – and "*qualification des personnes*" – person-related skills. In discussing skills we were never sure whether we were talking about the skills demanded by the job or the skills offered by individuals. When we use the term *compétence* we know we are talking not about the job but merely about the individual, and this does have the merit of removing one ambiguity.

CEDEFOP: The Répertoire, the job index, you mentioned therefore focuses solely on work analysis. Can the index then be used to say what abilities are needed to do a certain job?

A. d'Iribarne: In practice, this ambition remains unfulfilled in our time, because we have seen that the concept of "competence", once it has been broken down by means of the expertise-based approach, is not something that can be tackled in analytical terms. The approach via the job analysis route is an analytical approach. It reflects the idea that one can superimpose a job analysis matrix on a matrix of an individual's attributes and then establish matches (although today we realise that the matching would not necessarily be one-to-one). The current tendency is to say that there are two sets that cannot be related. In the final analysis, this is of no importance.

We are in what from the work viewpoint are evolving situations. On the one hand, the techniques employed are evolving, while on the other the organizational systems are recognized as fluid and are being researched as such even though they were formerly presented in theoretical terms as being clearly defined. The relation between techniques and work, then, is a relation that is by its nature a fluid system. We no longer try to arrive at a precise definition of a job's content, since the whole is inherently fluid and shifting. If we also accept that research on work whose characteristic is its fluidity is accompanied by the quest for a more collective mode of operation, for example by accentuating such aspects as interrelationships among individuals in collective decision-making procedures and processes, we will understand the status of landmarks better. This status is mainly of a social nature, allowing for what I have called "group socialization". But landmarks as to job content cannot in any way be used to define expertise and therefore competence.

CEDEFOP: But, according to certain schools of thought, it would be helpful to define job contents, if only to pave the way for planning the systems that produce the skills.

A. d'Iribarne: I have the feeling that today we are in the process of reinventing a vocabulary for the concept of gearing specific training to a specific job, a vocabulary that we rejected about 15 years ago, and for a very simple reason: it is that the logic of geared training is meaningless. It is meaningless because it assumes that there can be a one-to-one alignment between what is regarded as a specific, fully defined job and pre-packaged skills which have also been fully defined. What I am trying to say is this: if we assume that the concept of expertise is a "holistic" concept, it cannot be reduced to an analytical approach and therefore to a one-to-one match.

This does not mean that we should not be giving guidelines to the education system about how to build up skills, since the education system produces a number of referents which themselves are related to socialization – the reason for the importance of our famous landmarks, which are to serve as a reference for twofold socialization (socialization in the education system and group socialization in the workplace). These are in fact referents on the positioning of work not in its technical content but as one of the elements of a social system.

We cannot look at work on its own without considering its place within a social system. Today I would say that the integration of a job in the social system is more important than its technical content in the conventional sense of the term. Technical content is important when one can define the steps in the occupational ladder that lend themselves to formalization. We then come back to learning one's trade by the traditional apprenticeship of past times. The place where such apprenticeship can survive is the place where in practice the steps for mastering the skills entailed in a given job can be defined.

These steps can be defined in occupations whose basic techniques are sufficiently well known and coded to serve as the foundation for the corresponding occupational activity. Let me take two examples: one in manufacturing, the other in the service industry. In the former case the work entailed consists of maintenance and routine repairs of a mechanical or perhaps electrical nature. In the case of emergency repair work, we can define a series of steps by using an analytical approach, and up to a certain point this works very well. At this point, we can give the parties concerned the basic technological knowledge and the analytical reasoning skills they need to make progress. The same thing applies to the service industry. Let us take the case of bookkeeping techniques, which are entirely formalized and for which we can define a number of problems to be solved – problems of greater or lesser complexity – in relation to the acquisition of a given bookkeeping technique. We can then define a sort of corresponding series of progressive steps in the occupation of bookkeeper. In both cases, the basis for doing the job is the use of tools, procedures or formal reasoning of an analytical nature.

If, on the other hand, we look at what are called in the industrial field "control-room operators" (the best known instance being people working in nuclear-type control rooms), what happens in the relationship between the individual and his work will essentially correspond to the ability to cope with what I have called a chain of events. As a general rule these events are standard and the work needed here is not the work of expertise. But there are also chains of events which are not standardized, and it is here that expertise comes into its own. I would emphasize the links between expertise and the non-standardized event. What is not standardized is uncoded; what is uncoded is virtually non-transmissible by a formal external process. It can be transmitted only through a process of learning based to a greater or less extent on mentoring. The consequence is that those training courses that incorporate mentoring processes are now seen as being the most successful in two ways. The formal process of acquiring formalized science- and technology-based knowledge becomes an integral part of the acquisition of practical knowledge (and this is the definition of the German dual system). Alternatively, people go through two phases: in the first phase they accumulate formal knowledge, in the second they accumulate practical knowledge in working situations which are both varied and interlinked (as is the case with Japanese-style training).

Today France is hovering on the threshold of a choice between the two poles, the Japanese and the German. We have seen it very clearly with the declared aim of "80% of young people obtaining their bac"; this is a reference to the Japanese model, although without the ability to find young people suitable work where they can acquire practical expertise. Today we see it again with the debate on "German-style" training; we are still unable, with such job-related education and training, to raise the standard of young people's general education to an adequate level.

CEDEFOP: Many people have in fact mentioned an improvement in general education as being the ideal method of acquiring skills, as those skills are manifested today in general, and in the terms you have stated yourself.

A. d'Iribarne: This is one of the prevailing errors: we confuse the prolonging of education with the acquisition of items of knowledge that can be used and invested in an occupation. Some day we shall probably finally accept that theoretical knowledge can be more firmly fixed and retained if that knowledge is part of concrete processes of socialization, including the processes of socialization in the workplace. This does not necessarily imply full-time, boring, low-skilled, simple-content jobs.

What provides good training is complex work. The main problem is how to graft theoretical knowledge onto working practice as effectively as possible. For the population at large, the best chance of success will not come by extending the period of formal initial education. The extension of education is right only for parts of the population, for young people or adults who are at ease with the process of accumulating items of information by means of an abstract grasp of the process of knowledge. A substantial proportion of the population, however, has little propensity for this method. I am not saying that some people are less intelligent, I simply say that there are different methods of

access to the accumulation of knowledge (in particular in relation to work practices) and that, given this diversity, a substantial proportion of the population is more at ease with building up knowledge through practical work. If this is true, it means that the prospect of 80% of young people passing the baccalaureate is not a good prospect in terms of gaining access to the jobs market. It is not good because it is not effective in the process of building up vocational abilities.

There is an additional factor that I have not discussed, what one calls "professionalizing someone". Professionalizing somebody does not mean inculcating a number of items of theoretical knowledge. Professionalizing somebody is to call on a whole process of socialization, a series of patterns of workplace behaviour. We find that when employers say "that man doesn't fit in with what I need", the real reason for him being seen as unsuitable is that what the employer sees as the process of professionalization has either not occurred or has been badly done, and that the pattern of that person's behaviour at work is not the pattern suited to what is being demanded. The employer's demands are for a certain collective social mode of behaviour that is geared to production objectives.

CEDEFOP: You mentioned the German dual system, which is very much in vogue in many countries. In discussions this system is often described in simplistic terms, in other words as confined to the training process (or at least the training system). In fact, however, it is a very complex system of relationships between the training system, the employment system, labour organization, attitudes on labour markets, etc. Would it be possible, then, for countries having different values in practice to develop an identical system, one that is exterior to the education system which has a more important tradition and is far more highly valued by society as a whole?

A. d'Iribarne: We should not have too many irons in the fire, that would not be consistent. It is for this reason that I say that there are two poles corresponding to different points of view on the production of skills. At the one extreme there is the Japanese pole, at the other the German. With the Japanese pole, at no point in the process of basic education is there any concern for the vocational; the concern is strictly the acquisition of basic theoretical knowledge and references. But at the same time there is a hierarchical system that at a given level results in selection. This screening process is based on schools and on companies. The dominating companies on the labour market take pupils from the highest streams of the best schools. This is not disputed in the way society works. The process of socialization in the school and companies' modes of operation occur in a system of reference norms that are recognized and accepted by both. In the same way, when we look at the German system, we find that the process of socialization occurs in a different system of reference norms and institutional organization.

In France there is a third system, in which the reference norms and institutional organization create a problem. The result is that the point at which the break occurs is the time of entering the labour market. It is this point of entry onto the labour market which paves the way – since it is the point of rupture – towards changing the logic of the education system into the logic of employers. In this respect there is a sharp dichotomy between what employers say and what they do. For example, they demand young people with a high standard of technological education so that they can rapidly learn to do a complex job, but are prepared to put these people onto simple jobs since there are plenty of them and they come cheap. In other words, their main concern is not to put suitably trained young people to work in suitable jobs, but to acquire as cheaply as possible a workforce that can give them the highest possible return.

Concepts of professionalism are still concepts included in what employers demand, but they are not part of the constructed universe that is recognized as setting the rules of the game for the relations between the parties who are about to play that game. The Germans accept as a rule of the game between the partners that a professionalized job should be recognized and treated in a certain way both in the workplace – in other words in the organization – and in society – that is to say in the social system. This is not so in every country.

CEDEFOP: Does this mean that skills are in fact a matter of negotiation?

A. d'Iribarne: Skills have always been a matter of negotiation. What I am trying to say is that, in the end, I feel that skills are not the most important thing today. The most important thing is that companies and all their components should be pre-

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pared to take skills as a system of references in their collective operation, recognizing them both in relationships at work and in the pay structure. This is a hierarchical system based on everything regarded as more or less important in terms of each person's attributes, and at the same time a system of social organization, with a sort of hierarchy of individuals in society but not at work. This is what makes up the whole, and the question is how that whole is constructed.

The members of a company take advantage of all these factors in negotiations. What is important is to find out whether they are doing so on a reasonably coherent basis or if they basing their negotiations on an approach in which there are inconsistencies. I am more and more convinced that the main difficulty in certain countries such as France is that they find it difficult to invent a formal and informal social process of negotiation that can be used to construct consistent arrangements with reasonable stability, so that they can be recognized by all parties. I find that the concept of gearing training directly to a job immediately brings one back to the over-technical, instrumental approach in the relationship between education and work, whereas this approach should be part of something more important: integration into a social system. You have to look at what makes the social system coherent and then see what tools and technical elements you need in the light of this coherence, knowing that the technical tools – what I have called landmarks – will help both parties come to an agreement on a certain number of things, not on what will constitute the transfer between work and skills. If my reasoning is accepted and if one once again falls back on the problems of one-to-one gearing between training and employment, we would be in an impasse. What I cannot say is whether this impasse is linked with the inadequacy of our current theoretical knowledge or whether it is a conceptual impasse.

CEDEFOP: All the same, it is odd to note that this impasse is not unique to France. It is also odd that to a certain extent the Germans too are debating their problems concerning the future of their dual system.

A. d'Iribarne: Yes, but the Germans are discussing problems of redirecting changes in the dual system, guidelines for supporting changes both in the organization of work and also probably in German society's system of references.

CEDEFOP: The German problem is the question of steering the dual system. But in France, Italy and Spain there is also a problem of steering the education system.

A. d'Iribarne: In every country you have a problem of steering the educational machine. So long as professionalized work with a component of empirical knowledge continues to enjoy high status in German society, the dual system will be the pivot for organizing the relations between the development of knowledge and training on the one hand and the development of work on the other. There will be adjustments, but the adjustments will be around this pivot. What I mean is that the problem is different in France because we have on the one hand a whole body of opinion that argues for the superiority of abstract, bookish, non-vocational general education and, on the other, a whole school of thought to the effect that the priority should be professionalized work with a fairly high empirical content.

CEDEFOP: Looking at the scene from the viewpoint of the Community, what role can it play in facilitating the guidelines for training systems?

A. d'Iribarne: I cannot reply to that. The important thing is to look at the structure in each country and the legitimacy of skills recognized in its society and, based on this, to see how the training apparatus is constructed. Take the example of England: the higher education streams which attract the more talented young people are those leading to finance and business. Engineering-type studies tend to come lower down the ladder. The most famous colleges are those offering studies for the service industry, not for engineering. And when you see the people who do best on the jobs market, in other words the people in jobs with the highest status and earnings, they come from service-industry type of studies. In France this is not the case.

CEDEFOP: So if you look at the Europe of the Twelve you would find at least twelve different situations?

A. d'Iribarne: Of course. I am one of the people that think that we are starting with twelve "societal constructs", twelve "national constructs", each one different from the others. When we try to compare things on a technical basis, the exercise founders because of the weakness of our construction of their corresponding social characteristics.

CEDEFOP: Does that mean that an index of job profiles at a European level is an exercise doomed to failure?

A. d'Iribarne: No. It means that what has to be done is to construct a system of simple landmarks offering certain handles, so that links can be made between certain national referents. Apart from these, however, each country will reappropriate for itself in its own way the characteristics of individuals, irrespective of how those characteristics are keyed. To speak in a less abstract manner, this implies for example that an Italian who wants to come and work in France will have to adjust to a dual set of references, one in his country of origin and the other in his host country. Depending on his circumstances he will refer to his apprenticeship, if he comes from the building industry and has worked in small or medium-sized concerns, or he will refer to his baccalaureate if he comes from secondary education and a large concern. It is the relative standing of these two factors in the two countries which will mainly define the conditions on which he moves from one to the other. A person's qualifications, based on the practical expertise acquired through apprenticeship, may enjoy high status in Italy, but coexist with a low status in France where such qualifications obtain little recognition. However much one may construct formal equivalences at European level, nothing much can be done about it.

Interview with Jürgen Allesch

CEDEFOP: Your work consists mainly in providing advice and technical support to SME's. So you are in a good position to know the German employers' needs and attitude towards human resources development, and in particular the way they deal with qualifications.
On the other hand, there is today a major concern in Europe to find "a European approach to qualification", and more precisely, European standards to assess qualifications (whether demanded by the economy, or offered by individuals). It would be interesting to know what in your view is the value and potential use of these standards in the real-life situation and considering the cultural background of Germany.

J. Allesch: Well I think they are really necessary because with the implementation of the common market the labour market will grow substantially. So the employers must know the differences in qualifications of people coming from other EC countries. We can already see new emigration trends today, not only from eastern countries towards the west but also from certain EC countries to Central Europe, where wages and living conditions are better. So employers will need, more than ever, comprehensive information on the qualifications of the people they hire.

But these "standards", as you called them, should be defined, in my opinion, at a lower level. I'll give you an example: when someone who works with computerized machines tells you the kind of machine he works with and the training he received to work with that machine, it's possible to define a system of standards; but it becomes much more complicated dealing with the management level (which is, by the way, the one I'm more involved in).

Jürgen Allesch
Manager, Technologie-Vermittlungs-Agentur Berlin e.V.

There are huge differences between countries at this level. If you take, for example, the British system, most managers are people who studied history, law or other subjects, but in any case these studies do not develop managerial skills. This explains, in my view, the success of business schools and the MBA in England, as they are providing special training for management and consultancy in particular. In England managers are in general hired directly as managers, as there is no tradition of workers becoming managers through being promoted.

In Germany, we have a completely different situation. Usually people don't start their career as managers; they start as skilled workers and develop managerial skills step by step, through a mixture of experience and training. And I think for both large and small firms this is the strategy for developing good managerial skills, as they grow within the companies and people develop their qualifications in the work situation.

In Germany, business schools and the MBA don't exist, even if there is a certain amount of discussion on the possibility of introducing them. In my view, considering that our system is different, I don't think there is such a need. But perhaps such schools are relevant for other countries with different career patterns.

So you see how difficult it is to have a common system of standards at management level. For me, the best instrument for employers, especially at this level, to measure people's abilities, is their performance. What I mean is that when you watch how someone solves the problems they must cope with in their work, especially at engineering or technical level, that gives you the measure of their abilities.

CEDEFOP: You mentioned the difficulties facing a common European approach to qualifications, in particular at management level. But at skilled-worker level, we can also find substantial differences as the German initial vocational training system emphasizes work experience and socialization in the enterprise. In other countries initial vocational training takes place mostly in schools or in "workshops". So, also at this level, the individual profiles of people seem to be different.
On the other hand, the behaviour of labour markets varies significantly. In the internal labour market, you already mentioned that in Germany there is a tradition of what we could call "vertical promotion". But in the external labour market, it would appear that the currency of qualification is "the certificate" (provided mainly by the dual system). This is not the case in other countries.

J. Allesch: It depends on the branches of activity and the size of the enterprises. The handicraft sector is strongly regulated: there are strict regulations on the recruitment of skilled workers and on becoming a "Meister", people must have special training as well as the approval of the Chamber of Handicraft (or the Chambers of Commerce or Industry). This regulated system appears to be a sort of "protection" for workers against the use of "cheap labour" and short initial training.

On the other hand, in the public sector (administration), the certificate is also very important because people have the right to be placed in a wage bracket which corresponds to their academic qualifications.

But industry in general is mainly interested in the real skills that the worker can "offer". Wages negotiation is made on the basis of these basic skills within the firm.

It's a market-oriented approach where people know that they have "to do something" if they want to increase their income and responsibility. This is the system in Germany: if you work in a company as a skilled worker, you must take your career development into your own hands. Your career depends on your interest and attitude towards your work.

But we must make a distinction between big and small companies. Big companies act in this respect, in a very formalized way, (due to the various pressures put upon them, mainly by the unions). So they are very strict concerning the certificates at all levels and the wage rates, levels depending mainly on the duration of apprenticeship and on certificates and diplomas: it's a controlled system.

Small companies bargain on the basis of what people can do and of the role they play in the firm. Previous experience also plays a part in this bargaining process. They have a more flexible approach and sometimes it is easier for people that don't have good certificates to develop a career in a small firm. In big firms, without such certificates, people don't get a qualified job. This, in some way, could be interpretated as a "selective/elitist" system: "through your education (and what your parents can afford), you become what you will become". And I think that awareness of this phenomena is the thinking behind implementing what you could call "a second way", in the last 20 years, in Germany.

This second way consists mainly in enabling people to raise their general basic qualification during working time and through evening courses; and facilitating their access to higher education (not to "big universities" but to certain colleges). I think this was an important measure that was taken, as it increases the chances of the employees in the "bargaining process".

CEDEFOP: Recent developments in Germany puts you in the situation of having to compare national qualifications and certificates, as the new "Länder", previously GDR, enlarged the German labour market. What are the main problems which confront you in this comparative exercise?

J. Allesch: First of all the problem of the real comparability of certificates, mainly at "Techniker" level. In East Germany, they term engineer what we designate as "Techniker" (technical assistant). And this interpretation has consequences for levels and wages in the labour market. On the other hand, in West Germany when someone is designated a skilled worker (for instance in sanitary technology or medical technology), we know exactly what kind of skills he has and the technology he can work with. In East Germany, in spite of the good certificates people may have, a skilled worker was very often someone who carried out a non-skilled job. For instance, if you ask a "skilled worker for transport technology" what his tasks were, he would probably answer that he only was supposed to drive a vehicle, loaded or unloaded, and nothing else.

Another element of great importance is the attitude of people towards work. In East Germany there was a career planner behind the workers who was in charge of their permanent assessment and of suggesting what kind of training they should have. It was not the worker's decision. In West Germany, it's the initiative of the worker which counts for career progress. And if someone doesn't have this initiative, he can survive, but only at a low level.

CEDEFOP: How would you describe the manner in which German industry is coping with qualification needs?

J. Allesch: I would say that today companies are aware of the importance of having highly qualified people who are able to innovate and make them more competitive. Nowadays, "human capital" really means capital.

And more than that, I think that industry is aware of the fact that if they want highly qualified people, they must develop their own training strategies, as the market can no longer respond. That explains why big companies have developed a very costly system for the education and qualification of their own resources, with separate institutions (the so-called personnel development programmes). For small companies, even if the problem is the same, the solutions are different, as they don't have the same instruments and very often don't realize that the development of human capital is the best strategy for survival. Until now, they always got from the market the skills they needed (in fact they don't have a "training capacity" and at management level they don't have people in charge of personnel development).

I think we must invent new forms of helping small enterprises to develop skills. For five years now, we have been developing programmes for small enterprises, aimed at introducing new technologies as we are aware that it is of no use to bring new technology into an enterprise without solving the qualification problem at the same time. The public authorities also realize this and assume that continuing training is also a task for SME's.

The problem is that they are only able to offer to SME's traditional training instruments: courses and seminars outside the firm. And SME's are unwilling to accept this: they cannot afford to have people missing work for a certain time and they are afraid of increasing the risk of external mobility of their best resources, by allowing them to spend time outside the firm in contact with other people working in the same field. So, I would say that a solution to this problem could be to bring training into the job, partly during working time, partly during the employee's free time.

Nevertheless, a further distinction in the attitudes of SME's towards training and development of qualifications must be made: small, more traditional firms that carry out simple tasks are not so much aware of the qualification problems, and are not actively interested in training. On the contrary, small companies which pursue research and development, have a different attitude towards the development of qualifications, taking a more informal approach. An engineer in such a firm working with technology, reads a lot of specialist literature, this being a part of an informal qualification process. In fact, the engineers in such technology-oriented companies spend a remarkable part of their working (and leisure) time reading specialized literature on their field.

This also accounts for the wide variety of specialized journals you will find in Germany and the scope devoted to the exchange of information and experience by the German Association of Engineers (Verein Deutscher Ingenieure, VDI)

Jobs, skills and training needs in Spain

In Spain the last five years have seen significant changes in the structure and content of training provision without any accompanying strategic or methodological thinking (or even political, reflecting the problem of the powers of the various social institutions and agents) on an integrated approach to the study of occupational skills. We need to know what skills exist and what skills are needed (in the light of trends in technological and organizational innovation, etc.) and how we can structure training provision of a basic, specific or job-related nature in an efficient manner. The aim is that the labour market should find a rapid and flexible response to its quantitative and qualitative requirements in a context in which human resources are one of the strategic keys to competitiveness in the new dimension of the single European market.

It seems to me that there are major misunderstandings and confusion, but at the same time great opportunities, in this area. The thoughts and proposals put forward here are intended to contribute, from a trade-union viewpoint, to clarifying the picture and, more important, to the adoption, with government and employers, of sound and coherent agreements capable of advancing beyond the present situation.

José Manzanàres Núñez
Training Secretary of the Confederal Executive Committee of the General Union of Workers (UGT) with responsibility for the training field at national level

1. History of the study of skills in Spain

Starting with the Franco regime's economic-development programme in the 1960s the importance of direct labour in industry was very great and, up to a point, has remained so. The workers' vocational development programme (PPO) was aimed from the 1960s onwards at providing accelerated training in low- and intermediate-grade skills in the manufacturing sector.

In this type of job the concept of occupational skill is basically a direct one: mastery of the tasks which make up the job. This importance of tasks and the methods embodied in them is considerable in certain jobs which still exist; what has changed very greatly in recent times in industry is the relative importance of such jobs.

In accord with this interpretative and strategic model from the PPO onwards and with the creation in 1973 of the Training Service (SAF), later reorganized as the Employment and Training Service (SEAF-PPO) (the immediate predecessors of today's National Employment Commission, INEM), the emphasis was on occupational research as a means of determining skill requirements and hence training needs. The study of occupations started from their concrete manifestation as jobs: the observation of a representative number of jobs in a sample of firms.

Jobs and, later, occupational classifications were seen basically as groups of tasks ("job analysis"). The methodology concerned, of North American origin, served to determine the commonest occupational profiles in industry as regards their skill content in terms of tasks. In terms of training provision the approach was based on the paradigm of skill acquisition.

In this strategic and methodological line the PPO and SEAF did systematic, rigorous and wide-ranging work. Studies were made of occupations and of skills closely tied to the occupational perspective. "Occupational families" were classified; different jobs were classified in terms of training routes and course contents were designed to allow students to follow successive training modules with a view to achieving a real working career.

The Ministry of Labour contributed in practical ways to these activities in the area of skill studies, e.g. by publishing a national job and skill index. The methodological and strategic model adopted was thus complemented by other logistical elements which helped build up a whole of great solidity and internal coherence.

The economic recession, the squeeze on public spending and the organizational shortcomings attending the creation of the National Employment Commission (INEM) in 1978 led to a gradual abandonment of research and methodological obsolescence, with a failure to update the sectoral and occupational families and a loss of strategic awareness of the importance of the quantitative and qualitative changes affecting the labour market to the effective and modern functioning of the public employment services.

Over time other approaches have emerged within this institutional framework, with the result that different and sometimes contradictory approaches and methodologies now coexist within INEM.

To sum up, we can say that in an economic period (the 1960s and 1970s) when direct labour was needed, the stress was on retraining agricultural workers for manufacturing industry, with technological and organizational stability assumed, and that the methodology used for the study of

skills and training needs went through a positive phase.

Since the 1980s the use of labour as a production factor has been subject to continuous change; the service sector has grown more rapidly and technological innovation has accelerated, finding many applications in all sectors and occupations; and there has been ongoing demand for new skills at all occupational levels and stages. In such a situation new strategic thinking is needed on skills and training, taking account of past and current experience.

The new skill and knowledge requirements, encompassing as they do theoretical knowledge, the ability to solve abstract problems and certain attitudinal factors (receptiveness to change, etc.), are not all capable of being met by traditional approaches to training or occupational families. Sectoral boundaries are blurring and occupational categories no longer fit neatly into sectoral classifications. As much labour becomes indirect in respect of the end product, jobs and above all skills acquire an autonomy in respect of the product and particular occupations begin to overlap sectoral boundaries.

2. Study of the labour market, updating of occupational classifications and skill requirements

We have reviewed a period of the study of occupations and training provision in Spain which has culminated in methodological confusion and a lack of drive in this field at the institutional level. In the face of the new challenges we must add the need to integrate other efforts into this new approach: the workforce survey carried out by the National Statistical Office (INE), the revision of the National Occupational Classification (CNO) based on the International Labour Organization's standard classification (itself revised in 1988) and the updating of SEDOC at Community level. Going beyond any concrete measure, what is needed is a study of the labour market involving the adoption of a strategic approach comprising a range of measures and capable of remedying current shortcomings.

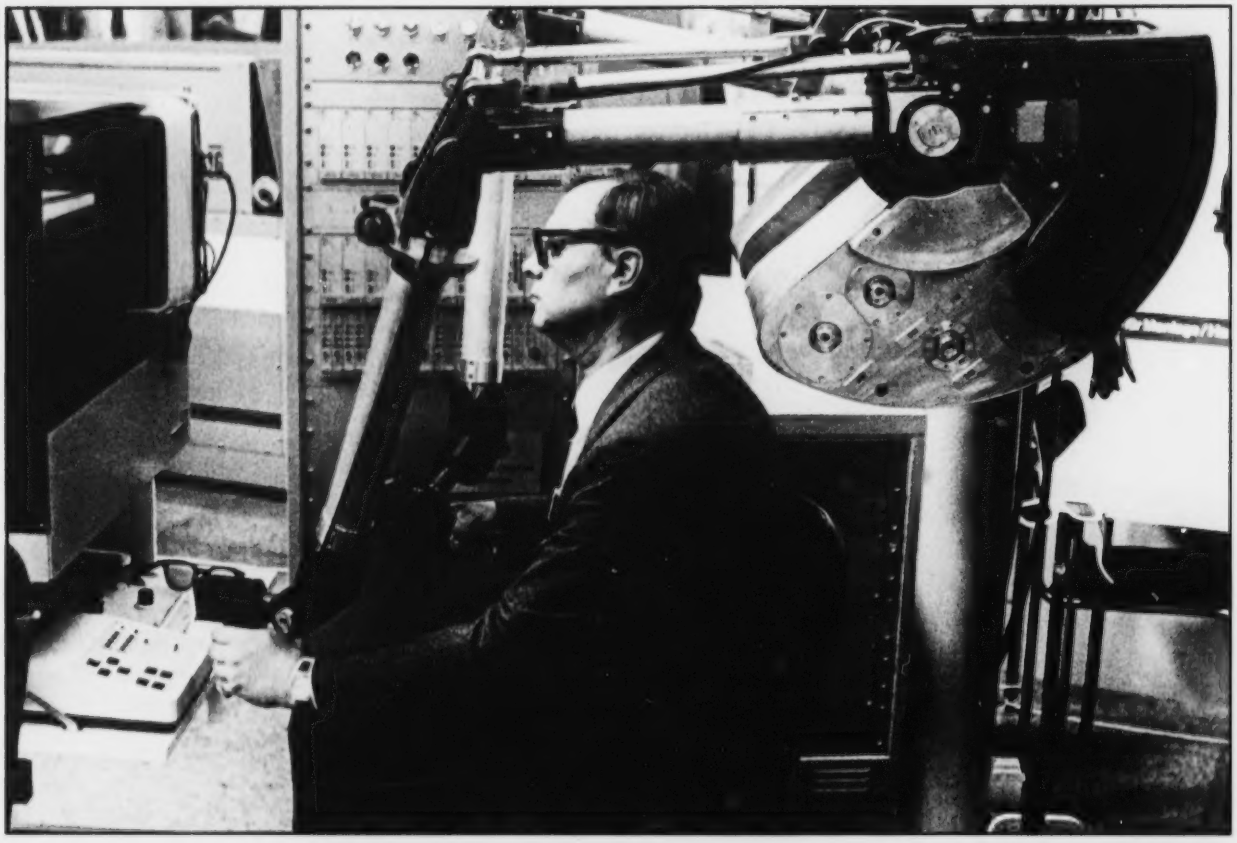
Official action of a qualitative nature relating to labour markets remains weak, though some efforts are being made at improvement. Since 1986, for example, large sums of money have been channelled into short courses of job-related training (under PlanFIP, the National Training and Employment Plan); attempts are under way to relaunch placement management through INEM's "integrated offices"; an Occupational Training and Selection Plan is in operation; etc. However, all these activities depend for their viability, or at least for their effectiveness, on job and, above all, skill data which reflect the realities of the labour market. Even if we continue to increase the resources going into job-related training, while there is no detailed study of skill requirements broken down at least by sector and geographical area, a large part of those resources will go on being wasted.

But there is more. The design of the new vocational and technical education of the Ministry of Education and Science has an Achilles' heel, in that it depends on a knowledge of skill requirements in both quantitative and qualitative terms.

At the same time there is a statutory obligation (Law 1/87) to develop the National Vocational Training Programme in such a way as to ensure the rational and effective coordination of the various forms of provision (by central government, regional authorities, municipalities, firms etc.) in the training field.

Summing up, all official action relating to labour markets relies on a continuously

Adolf Möller / Brinzer-Okapia


Manfred Vollmer

updated picture of the skill situation: identification, linkage with demand through the system of computer codes, vocational information and guidance etc. This task – ensuring flexible and effective transparency of the labour market on both supply and demand sides – is of vital importance to the economy and to people.

In the following I make a number of suggestions which could help overcome the shortcomings with which we are concerned; they should be seen as forming a whole.

2.1. Simultaneous and integrated study of the labour market:

- in a quantitative sense;
- with adequate quantitative precision;
- with a geographical breakdown at least to provincial level, but on the same basis for the whole country.

It is important to avoid separating the various aspects, given that the few studies which are made suffer precisely from the problem of their scant usefulness for application to "a la carte" training policies and, above all, their scant linkages with earlier studies (EPA, INEM's Ongoing Survey of Occupations, studies made by regional authorities or firms, etc.). This task should be led by INEM as the body responsible for public employment services. The new stage represents a new opportunity, once again, to "make up for lost time".

2.2. Study of training needs and provision

The first need is to overcome the current confusion between jobs and skills, with explicit or job-centred demand understood as a need for skills, which narrows and impoverishes the dynamic study of occupational skills and training: the proactive or preventive management of the demand for skills and training incorporating economic and social variables, technological innovation and so on.

Moreover the development of "occupational profiles" is likely to transcend traditional approaches by distinguishing types and subtypes ("units of competence") which will be determinants of both initial and continuing training (modules or credits) and also of retraining, always within a fundamental typology linking training, information on labour-market requirements, vocational guidance, information on training provision and so on. This important qualitative work, adding to the value of other wider studies of the labour market made notably by INEM, should be undertaken by a new technical agency in the framework of the General Council on Vocational Training which would carry out and update on an ongoing basis the repertory of occupational profiles. I return to this topic later.

2.3. As I said at the outset, it is vital that we update our occupational and skill classifications, doing so in a continuing interaction with the objectives mentioned. Above all, we need a radical and effective updating of the National Occupational Classification, in conjunction with INEM and SEDOC, principally, as databases on the demand for labour and skills, to provide a basis for training provision etc.

3. A proposal: the Skills Agency

I have stressed the strategic importance of studying the qualitative and quantitative behaviour of the labour market if the right vocational-training policies are to be adopted. In Spain it is the General Council on Vocational Training – a tripartite body, comprising representatives of government (the ministries of labour and education), employers and unions – which has the job of elaborating an annual programme of vocational training in all its aspects.

However, the obsolescence of the content of regulated training courses (within the education system) and the lack of systematization of occupations, compounded by the multiplicity of institutions with a role, have led to ineffectiveness, as witness the continuing unmet demand for particular skills ("bottlenecks") affecting notably the construction, hotel and printing industries in recent years.

INEM's Ongoing Occupational Survey is too narrow in scope. It does not touch on the factors mentioned earlier, while the "INEM validation plan" or range of job-related training courses on offer fails to pick up the demands of the labour market, with many courses being designed on the basis of an excessive specialization and without taking account of the other kinds of factor I have mentioned – in other words, the old job-based approach is followed.

We also need to investigate the extent to which course content is or is not geared to industry's new requirements and skill needs. The Ongoing Survey focuses on "what is", but is it effective as a qualitative instrument to guide training demand, and above all is that demand sufficiently explicit?

From the methodological viewpoint a series of questions arise:

- To what extent has the Ongoing Survey helped improve INEM's preventive and qualitative management?
- Has overall employment demand notified to INEM increased as a result of the Survey?

From the viewpoint of those seeking training, has it been useful for the vocational guidance system or have only the offers of training places from collaborating centres been included?

To what extent do both regulated training courses within the education system (particularly at the elementary level) and job-related courses (under the aegis of INEM) provide students with a vocational profile which will help them to enter employment?

The answers to these questions, representing the evaluation of the work of the Ongoing Survey, would no doubt give new focuses to the relationship between training and work. It is clear to me, in any event, that the mechanism of the Ongoing Survey cannot be turned into a Skills Agency.

To overcome these problems there appears to be a consensus between employers (in the Spanish Confederation of Employers' Organizations, CEOE), unions (the UGT and the Workers' Commissions) and central government (ministries of education and labour) that a new, flexible and effective body is needed, in the framework of the General Council on Vocational Training, with the following tasks:

1. To study the industrial sectors associated with economic growth and the development of the market, technological innovation etc.

2. To describe these sectors and training needs; to compile cross-sectoral occupational profiles and identify new occupations etc.

3. To identify the kinds of knowledge and aptitude required and equivalences and comparisons between different occupational skills and skill groups.

4. To update the occupational and skill classifications (reform of the vocational-training systems) on the lines of the European Repertory of vocational profiles.

Current ignorance of these factors leads to a considerable waste of public and human resources at an individual level, promoting marginalization and social alienation. All training provision should start from the skill requirements of an increasingly dynamic and international labour market; a nation-wide institution, with European links and a European outlook, is essential if we are to tackle adequately initial and continuing workforce training. There must be involvement of, or coordination with, Spain's regional governments (the Autonomous Communities), and the following areas must be covered on a systematic and ongoing basis:

- system of standardization and definition of officially recognized occupations and regulation of occupational competences;
- characteristics of recognized occupations;
- the training content of each occupation, with regular revision (e.g. revision of content every five years and revision of the occupation every ten years);
- admission requirements for each of the modules and certifying examination;
- aptitudinal characteristics of occupations (guidance) and adaptations for individuals or groups with special needs;
- training needs (updating) within the occupations concerned;
- the content of the practical component of alternance training, coordinated training, training contracts and practical contracts, with a view to making these training models effective in each of the occupations or specialties concerned.

In this way I believe that real collaboration between employers' organizations, unions and official bodies can be promoted in a practical fashion, identifying the new skills required by ongoing technological change and the developing Single Market, charting the demand for these skills and the implications for initial and continuing training, determining the qualification and attendance criteria governing the issue of certificates of occupational competence, etc. Concerted action of this nature in the area of skill requirements and vocational training is of vital importance to the efficiency of our firms and the competitiveness and quality of our products and services.

Description and classification of qualifications

Defining qualification

The terminology used for qualifications is not standardized. In Germany the word "Qualifikation" has come to mean the individual's capacity for work, comprising professional and social competence. The empirical classification of qualifications in the area of professional competence (knowledge/know-how, work methods and skills in specific occupations) is further advanced than in the area of social qualifications (attitudes, values, behaviour within the social framework of the job/task).

The most important and common indicators of qualifications are education and training certificates. They are the subject of regular surveys for the official statistics of the Federal Republic of Germany and provide an insight into changes in the qualification structure of the labour force, which has shifted sharply towards people with higher training certificates.

"Qualification" means all the knowledge and abilities, including behavioural patterns and skills, acquired in processes of the individual's socialization and education. Individuals acquire qualifications in order that they may actively shape their lives not only as workers but also as citizens and members of the family. Besides their vocational dimension, qualifications therefore have a social and societal dimension. The latter particularly concerns abilities which enable the individual to meet societal requirements arising from a workable democracy, meaning above all requirements relating to participation at all levels.[1]

Laszlo Alex
Head of the Structures, Planning and Statistics Division of the Federal Institute for Vocational Training in Bonn and Berlin

Education (or vocational training) and employment are linked by **vocational qualifications**. At macro level, the level of a society or economy, vocational qualifications are **societal media of exchange** in the labour market. They represent combinations of abilities the levels and substance of which are standardized and which have emerged from a long tradition of trade in labour as a function of supply (qualification requirements at places of work) and demand (the qualifications offered by an individual or group of individuals as suppliers of labour). In other words, "qualifications are not offered in the labour market individually or in any arbitrary combination, but always occur as elements of quite specific, regular, supra-individual, socially standardized combinations which dictate that certain substantive qualification elements are always linked, while others in principle never are ... These fixed, institutionalized 'models of labour' characterize what is traded in the labour market as **an individual's capacity for work**."[2] An individual's socially defined media of exchange in the labour market are known as an **occupation**, which is located in the area of tension between job (requirements) and worker (qualification potential) and is ideally to be seen as the two sides of one and the same image.

Qualification elements

Figure 1 reveals not only the area of tension between workers and workplaces but also the two dimensions of qualifications, to which different "derivation contexts" apply. Figure 2 describes the qualification elements of professional competence and social competence and also attempts to classify the concept most frequently used in the debate in Germany, Dieter Mertens' "key qualifications". It further indicates the elements which can be investigated directly with the aid of surveys ("measurable") and those on which conclusions can only be drawn indirectly, with the help of indicators like those used when candidates are tested.

Besides the ability to plan and perform work and to acquire further skills/learning competence, this covers the whole range of social skills. "Social skills" is the term used to designate those skills "which should not be regarded as 'professional', 'functional' or 'occupation-specific' skills (see the left side of Figure 2) in the narrower sense of learning objectives which can be formalized and of contents of vocational training which can be examined (see the Vocational Training Act)[4]." The term "social skills" covers various qualities and abilities (motivation, values, abilities in dealings with others) in the socio-organizational context of the activity.

As the study of social skills is predominantly a recent activity, there is some danger that their significance will be overrated with the passage of time.

Qualifications in the official statistics of the Federal Republic of Germany

Recording formal qualifications acquired during education and training forms part

of the standard programme of the official statistics. When combined with other features covered by the official statistics on gainful activities, such as sector of the economy, occupation, occupational status/position in the firm, sex and age, these statistics enable differentiated statements to be made on the qualification structure.[5] The most important sources of data are the microcensus (1% random sample), the statistics on employees held by the Federal Institute of Labour and the population and occupation censuses.

Figure 1: The interrelationship between occupation, job-related requirements and the individual's qualifications

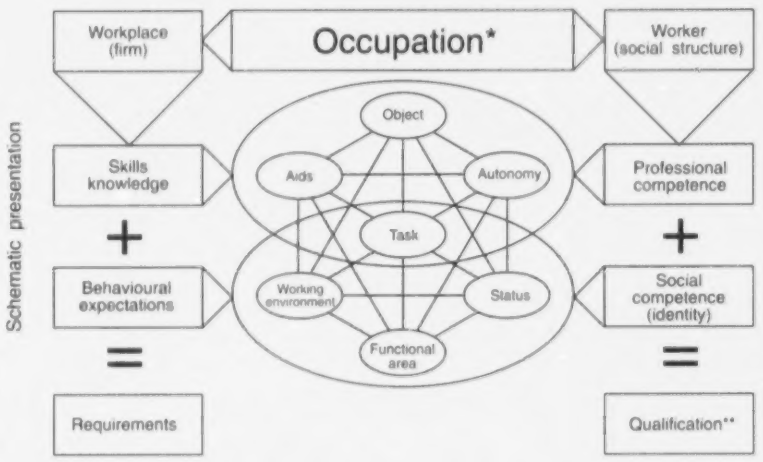


Diagram: Friedemann Stooss/Lothar Troll, Institute for Labour Market and Occupational Research (IAB) of the Federal Institute of Labour

* "Occupation" means a combination of features that is typical of a prescribed task; it emerges and exists in the area of tension between the workplace and the worker.

** Qualification in the sense of the individual's capacity for work has its counterpart in (job) requirements. It has two interlocking facets, professional competence and social competence.[1]

Microcensus

In the annual microcensus a distinction is made between education and training. As a separate question is asked about each aspect, cross-references are possible.

The options in the case of the question on education are:

- elementary or lower-grade secondary school leaving certificate;
- intermediate-grade secondary school leaving certificate or equivalent;
- technical college entrance certificate;
- certificate of general or specialized tertiary education.

The options in the case of the question on the (latest) training certificate course completed are:

- no training certificate;
- apprenticeship/initial training certificate or equivalent certificate obtained at a specialized vocational school;
- on-the-job training;
- Meister/technician or equivalent technical school certificate;
- technical college diploma (also engineer's certificate);
- university degree.

As the options have remained the same since the 1970s, long-term comparisons are possible.

In the case of university degrees and technical college diplomas the subjects studied are also included, thus enabling the type as well as the level of the qualification to be evaluated.

In addition, the microcensus regularly includes questions about continuing training. The interviewee is asked if he has participated in continuing training in a given period (usually two years), what form it took (employer-sponsored, off-the-job) and how long it lasted.

Considerable importance is also attached in the microcensus to the interviewee's position in the firm (this factor has been covered every two years since 1982).

A distinction is made between ten levels:

- trainees;
- self-employed with one to four employees;
- self-employed with five or more employees;
- clerk, semi-skilled worker;
- salesman, skilled worker, journeyman;
- specialist, foreman;
- senior skilled worker, Meister;
- section manager;
- department manager;
- director, office manager, plant manager.

Detailed questions are also asked about various features of each activity.

Population and occupation censuses

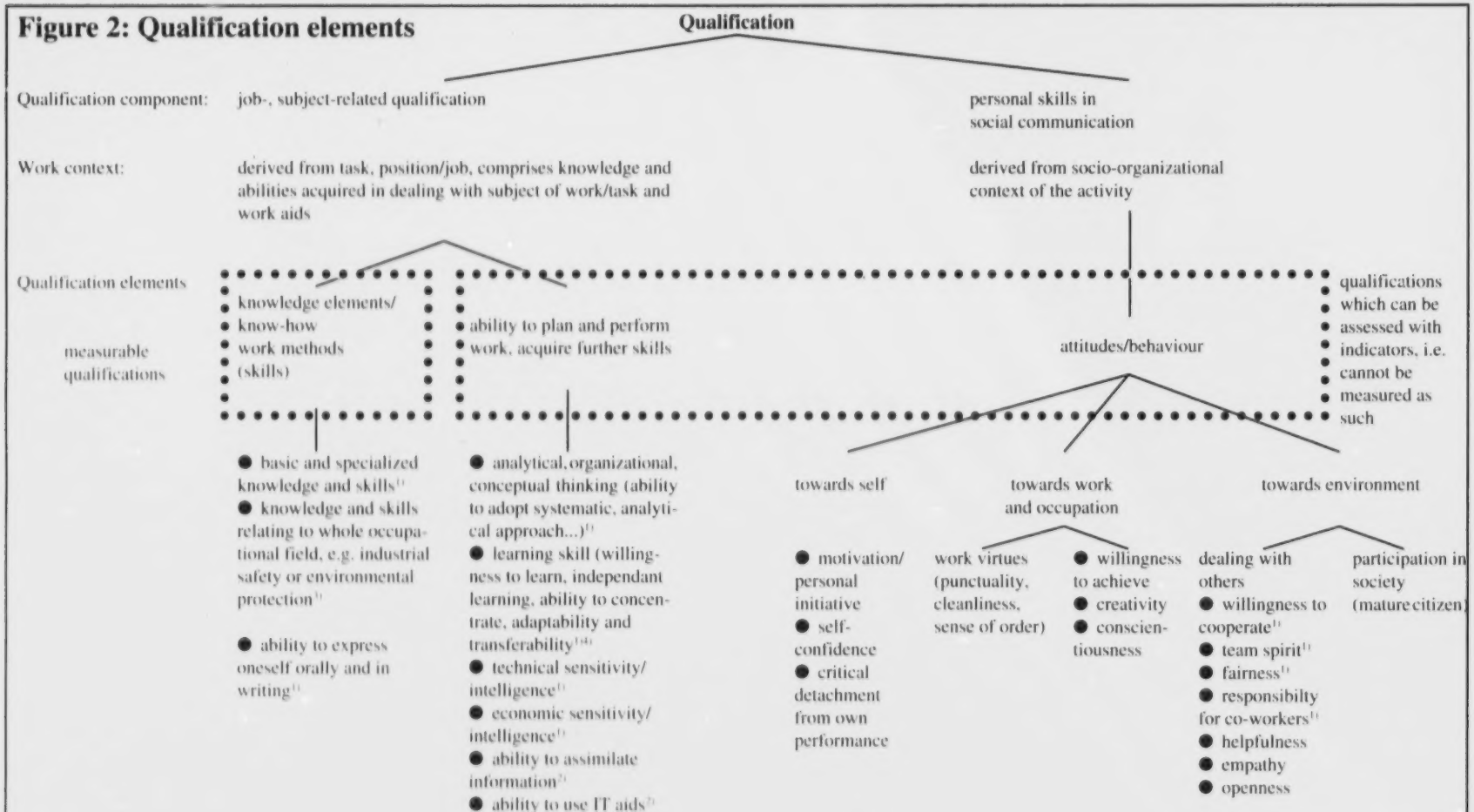
Certificates:
The population and occupation censuses similarly make a distinction between general and vocational certificates. The options are similar to those used in the microcensus. Particular attention is also paid to the occupation for which the interviewee trained.

The usual distinctions are made in the case of occupational status (skilled worker, wage-earner, salary-earner, etc.). Differentiated data are available for 1970 and 1987. The differentiation and comparability of the findings of the 1950 and 1961 population censuses are very limited.

Statistics on employees
These statistics stem from a full annual survey based on the obligation of employees to contribute to the social insurance scheme. They do not cover the self-employed, civil servants or members of the armed forces. Data on all years since 1978 are available.

Certificates:
The statistics on employees use a combination of general and vocational certificates:

Figure 2: Qualification elements


Qualification
Qualification component:
job-, subject-related qualification
personal skills in social communication
Work context:
derived from task, position/job, comprises knowledge and abilities acquired in dealing with subject of work/task and work aids
derived from socio-organizational context of the activity
Qualification elements
measurable qualifications
knowledge elements/ know-how work methods (skills)
ability to plan and perform work, acquire further skills
attitudes/behaviour
qualifications which can be assessed with indicators, i.e. cannot be measured as such
● basic and specialized knowledge and skills[1]
● knowledge and skills relating to whole occupational field, e.g. industrial safety or environmental protection[1]
● ability to express oneself orally and in writing[1]
● analytical, organizational, conceptual thinking (ability to adopt systematic, analytical approach...)[1]
● learning skill (willingness to learn, independant learning, ability to concentrate, adaptability and transferability[1][4]
● technical sensitivity/ intelligence[1]
● economic sensitivity/ intelligence[1]
● ability to assimilate information[2]
● ability to use IT aids[2]
towards self
towards work and occupation
towards environment
● motivation/ personal initiative
● self-confidence
● critical detachment from own performance
work virtues (punctuality, cleanliness, sense of order)
● willingness to achieve
● creativity
● conscientiousness
dealing with others
● willingness to cooperate[1]
● team spirit[1]
● fairness[1]
● responsibilty for co-workers[1]
● helpfulness
● empathy
● openness
participation in society (mature citizen)

Note: Within the concept of "key qualifications" Mertens makes a distinction between basic qualifications[1], horizontal qualifications[2], lateral elements[3] and vintage-factors[4] (= continuing training to overcome inter-generational differences). Dahrendorf and, later Kern/Schumann and other industrial sociologists make a distinction between functional (process-specific or process-linked) and extrafunctional (process-independent) qualifications. Functional or process-specific qualifications are basic and specialized vocational knowledge and skills (see above). The extrafunctional qualification category includes, with varying degrees of differentiation depending on the author, "abilities" and "behaviour" (see above).
Dahrendorf, for example, lists as elements of extrafunctional qualifications: 1. social adaptability in the firm; 2. responsibility for people and things; 3. latent functional ability = transfer qualification
while **Kern/Schumann** refer to: 1. adjustment to new requirements (flexibility); 2. technical intelligence (capacity for causal, abstract and hypothetical thinking; 3. technical sensitivity (capacity for understanding complex technical interrelationships); 4. responsibility (ability to take a conscientious, reliable and independent attitude towards work).

Mertens, D.: Schlüsselqualifikationen. In: Mitteilungen aus der Arbeitsmarkt- und Berufsforschung, Vol. 7 (1974), pp. 36-43; **Dahrendorf, R.:** Industrielle Fertigkeiten und soziale Schichtung. In: Kölner Zeitschrift für Soziologie und Sozialpsychologie, Vol 8 (1956), pp. 540-567; **Kern, H., Schumann, M.:** Technik und Industriearbeit, Frankfurt a.M., 1970.

- primary and lower-grade secondary school certificate, initial training not completed;
- primary and lower-grade secondary school certificate, initial training completed;
- university entrance certificate, initial training not completed;
- university entrance certificate, initial training completed;
- technical college diploma;
- university degree.

Occupational status:
In the commercial and industrial sector a distinction can be made between workers, skilled workers and 'Meister'. Salary-earners are not differentiated.
All data can be combined with the other features of the statistics on employees (occupation, age, income, sector of the economy, etc.).

Trend in the qualification structure[6]

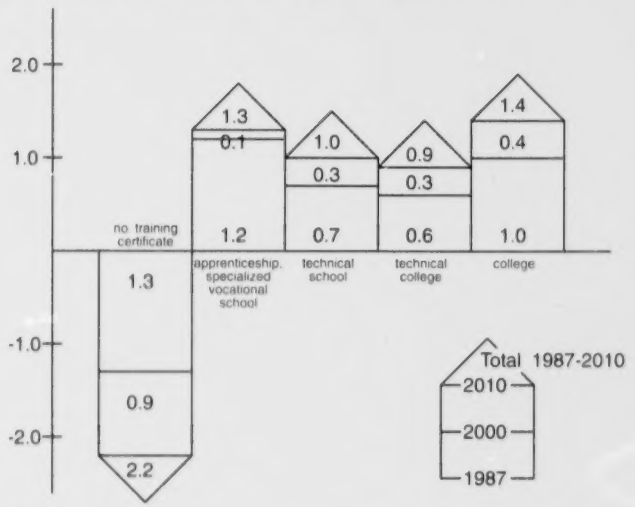
The qualification structure of the gainfully employed in the Federal Republic of Germany has changed considerably in the last decade. Since 1976 the number of gainfully employed people who have not completed their initial training has fallen by 2.8m to 5m. The proportion of such people in the labour force has thus been almost halved to only 18% in 1989. In addition, the proportion of gainfully employed people who have completed initial on-the-job training or obtained a university degree has risen sharply (see Figure 3). This trend is expected to continue at a lower rate in the coming decades. By the year 2010 the proportion of unskilled workers is likely to fall by a further 50%, i.e. to less than 10% (see Figure 4). The quantitative shifts in the qualification structure are due to the change in qualification requirements. Today's jobs are characterized not only by a change in professional competence to take account of the modern technologies but also by growing social competence (willingness to achieve, creativity, teamwork, etc). Analytical thinking that enables problems to be broken down so that they can be processed with the help of information technology (logical, abstract thinking) is gaining in importance. Rapid technical change is also a constant challenge to the ability to learn (learning competence in continuing training).

Figure 3: Trends in the qualification structure of the labour force, 1976-1989

Skill level	1976 %	1982 %	1987 %	1989 %
Still undergoing training	4.1	5.2	6.2	5.4
No training certificate	33.4	27.2	21.2	18.0
Employer-sponsored training (apprenticeship)	49.2	52.5	54.4	57.9
Specialized vocational school				
Technical school	6.2	6.6	7.3	7.7
Technical college	2.1	2.7	3.6	3.8
Scientific college	4.9	5.9	6.6	7.2
Total	**100.0**	**100.0**	**100.0**	**100.0**
in millions of people	**25.8**	**26.8**	**27.1**	**27.7**

Source: Federal Statistics Office, Microcensus, author's calculations

Figure 4: Change in the labour force, by qualification levels, in millions, in 1987, 2000 and 2010



Source: IAB/Prognos-Projektion 1989, author's calculations

1 See Alex, L., Qualifikationsforschung – eine Zwischenbilanz, in: Berufsbildung in Wissenschaft und Praxis, No. 1, 1979

2 Bergmann-Krauss, B., Vom Aushandeln von Qualifikationen, in: Beiträge zur Arbeitsmarkt- und Berufsforschung, Vol. 30 (2), Nuremberg 1978, p. 25

3 From Stooss, F., Stothfang, E., Berufskunde, Schriftenreihe Aufgabe und Praxis der Bundesanstalt für Arbeit, No. 7, 1985, p. 64

4 Blaschke, D., Soziale Qualifikationen im Erwerbsleben, Beiträge zur Arbeitsmarkt- und Berufsforschung, Vol. 116, Nuremberg 1987, p. 14; the description of the "branches" under "social competence" in Figure 2 is based on Blaschke's work.

5 My thanks to Dr. Rudolf Werner of the Federal Institute for Vocational Training for his help with this section.

6 The quantitative data in this section relate to the territory of the former Federal Republic of Germany, i.e. excluding the five new Länder.

The nature of skills: their specific features and their analysis

If the future European labour market is to be a skills market (Jones, 1990) there are a number of questions to be asked. Is there consensus as to the concept of skills and how they should be analysed? Are workers' skills transferable, are they recognized? Can there be such a thing as a European approach to skills? At present, any approach is closely bound up with what happens nationally, and recent developments would seem to complicate analysis even further.

The nature and specific skill features of skills

The substantial literature on the concept of skills has highlighted its complexity. Researchers have pointed out that skills come at the junction between the education system and the working world and are a vital factor in the relationship between training and employment. They have contrasted skills as demanded by the job and as offered by the worker, and the individual's type of work and potential. They have concluded that conventional or actual skills are a compromise or serve as the interface between others (La qualification du travail, 1978; Lichtenberger, 1990).

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The debate on this issue has been particularly heated in France, partly because there is no link between training and diplomas – essentially the sphere of education and the State – and employers, who do not automatically take such training and diplomas into account. For the employer, what is important is the work that is done, and any links between employment and training are open to debate. The situation is altogether different in Germany, where the concept of "*Beruf*" refers equally to training and to employment. Since employers are involved in training and in the conferring of diplomas, the problem of recognizing paper qualifications in working life does not arise. The situation is comparable in Spain, where skills are essentially acquired on the job and there is no such thing as institutional recognition (CEREQ, 1991).

These examples in themselves demonstrate that the concept of skills is country-specific, a fact that is confirmed if we look at the various aspects of skills.

a) It is particularly true of **training**. In France, training can always be defined in terms of number of years' schooling, and considerable importance is attached to the grading system which is based on length of education. But how can reference be made to such a grading system in a country like Germany, where skills are acquired by two types of training: one general and school-based, the other vocational and mainly obtained at work, the duration of the former varying according to skill area, the state of the labour market and the individuals concerned (CEREQ, 1991)?

b) If, on the other hand, the approach to skills is through the conventional classifications, three fundamentally different systems emerge:

- a task- or function-based system, which is more highly developed in France;
- a system based on the trade and the traditional hierarchy created by usage, as in the United Kingdom;
- a system related to neither job nor function but which takes an individual's general attributes (diploma, age, seniority) into account as in Japan (Eyraud, 1990).

c) The specifically national characteristics of labour markets, such as demography, employment, tradition and culture, warrant separate consideration.

d) It might be thought that an approach to skills based on the content of work need not refer to these country-specific features. Maurice, Sellier and Silvestre, in what have now become classic studies, have highlighted the societal effect, clearly showing that the production system itself is in part influenced by specific data, in particular by training (Maurice, Sellier, Silvestre, 1982; Ph. d'Iribarne, 1989).

It is not just job content that differs, but also the perceptions of that content. The long-standing differences between France and the United Kingdom are significant in this respect. In France, the *Répertoire des emplois*, a job directory produced by CEREQ in the 1970s, is noteworthy in attempting to provide as objective as possible a description of the tasks involved in a standard job and to relate that job to the technical and organizational framework of the workplace. Although it offers some tentative information about "basic technical skills" and "job-related capabilities" (with a view to promoting mobility and retraining), the new edition of the *Répertoire opérationnel des métiers et*

emplois (Operational Directory of trades and jobs – ROME), published by the Agence Nationale pour l'Emploi, has maintained this tradition.

In the United Kingdom, work also undertaken in the 1970s was geared towards the grouping of skills. The aim was to depict tasks in terms of skills and to identify generic skills, irrespective of their status in the organization. A somewhat similar approach has been taken more recently in a major project defining vocational qualifications, not so much for the purposes of analysing jobs as for training objectives (Jessup, 1991).

e) Having looked at all these differences, it is no surprise to find that the way vocational activities are represented, and the way they are referred to by the statisticians, are also specific. This specificity, however, has less to do with real differences between jobs in different countries as with the ways in which the classifications are constructed. In every country the people who have devised these classifications have had specific objectives in mind and have adopted quite specific methods (CEDEFOP, 1981).

A case in point is France, which has worked out a classification scheme based more on socio-vocational categories – i.e. homogeneous social groups – than on trades (trades in the sense that a particular technical skill is used) (Simula, 1983). The opposite approach has been adopted in the German classification, while other countries have referred to the ILO international classification (CITP) which attempts to highlight the nature of the work done and the skills demanded.

One should not, however, exaggerate the stress that has so far been placed on specific national characteristics. In the light of experience in international comparisons in various sectors (Gadrey, 1991), the suggestion is that sector-specific characteristics are often more decisive than national characteristics (the former interacting with the latter) as regards job content and certain aspects of manpower management (e.g. fluctuations associated with technical constraints or the market). The production of a given good or service entails more or less the same operations, whatever the context. The main difference between one country and another, and especially between one employer and another, is the level of automation of those tasks, the organizational methods, the division of labour and, more particularly, the terms of employment and individual characteristics of those doing the job, having regard to the specific nature of the labour market (demographic structure, unemployment rate, female employment, the availability of skills, etc). All this is enough to make comparisons difficult, and the difficulties are on the increase.

The growing difficulties of analysis

Over the past few decades, a combination of four factors has profoundly altered the nature of skills and the way they are perceived:

- the intensification and internationalization of competition;
- the spread of new information technologies;
- the changing structure of jobs, as evidenced in particular by a steady growth in jobs in the tertiary sector: in more advanced countries, these now account for over two-thirds of all employment;
- lastly, the concern for effectiveness and for adapting to changing circumstances, with many employers questioning the rigid, hierarchical Taylor-style model of organization, whose impact has been particularly strong in France. The tendency is to move towards more flexible, less stable patterns of organization.

The combination of these factors complicates the analysis of the various dimensions of skills in various ways:

1. Analyzing individual work by reference to an organizational structure is less hard-and-fast due to this flexibility and instability. A similar effect is created by the development of group work, with each member of the group being likely to take the place of the others and with any job descriptions relating to the group rather than to the individual.

2. Apart from group work, there is a discernible trend for workers to be more mobile. And "the more mobile they are ... the more risky it is to attempt to describe their skills in terms of expertise mobilized in connection with a specific job" (Stroobants, 1991).

Given these changes, the approach used for the *Répertoire français des emplois* during the 1970s – to analyse jobs from the viewpoint of both the individual and the organization – would be inappropriate today. (This does not mean that the *Répertoire* is not a useful reference work on functions and tasks, even though their description may no longer reflect the current situation.)

3. This questioning of the Taylor-style method of organization (the subject of much debate) is manifested in a tendency towards restructuring tasks and functions. Whereas the former has no specific impact on the analysis of skills, it is a different case with the latter. The present tendency is towards giving all employees responsibility for management and quality, incorporating into the production process operations hitherto regarded as functionally separate, and making organizations more commercially dynamic. It is becoming ever harder to distinguish between functions such as production, quality, maintenance and management, since the dividing lines between them have become more blurred. And yet this functional analysis used to be the basis for a good deal of work analysis.

4. Moving down the scale, from functions to tasks, the shift of employment to the service sector and the prevalence of general process surveillance roles mean that tasks are becoming less and less specific and increasingly hard to identify. It is not difficult to list the operations that a machine-tool operative must perform, or those done by a conventional bank clerk who still works out calculations, enters data or records facts. But the work done by a supervisor of automated plant or even a bank executive can be described only by highly complex analyses or very general descriptions; they do not fit easily into a chart having precise points of reference.

5. In traditional skills analysis, particularly when the reference point is training,

the basic aim used to be to identify the knowledge and expertise needed to perform a vocational activity. In today's climate, employers are concerned less with specific training for a given job than with the development of more general, transferable skills, less with knowledge and expertise than with behaviour, sometimes referred to the "third-dimension expertise", i.e. "expertise that may be regarded as non-technical; it corresponds to a massive social demand which contains nothing new but which has special features in the current situation. What is expected of adult vocational training is that it should produce or modify those general and vocational abilities which to a growing extent are a basic prerequisite for work, irrespective of functional or hierarchical level. Third-dimension expertise affects population categories not hitherto involved. Autonomy, for example, is a goal set not only for executives and managers but also for blue-collar and clerical workers, unskilled young people and the unemployed" (Aubrun, Orofiamma, 1990; Stroobants, 1991).

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A considerable amount of research is currently being done on these skills, relating to personnel management as much as training, but there seems to be no one universally accepted method.

6. Another development affecting skills is no doubt specific to France: it concerns the relationship between the working world and the education system.

Firstly, the issue of the inadequacy of the education and training system is becoming ever more pressing (and not just in France). In response, new schemes are being devised and changes are being made to diplomas with the aim of matching them more closely to employers' demands. Links with the working world are growing stronger and alternance training is now widely accepted.

At the same time, it is apparent that the training system is subject to growing social pressure. The high level of unemployment has helped to make employers' demands more exacting, and has generated considerable demand among parents for longer education and for more advanced skills for their children. Hence the success of the extended training schemes (two years after the end of the secondary cycle for technicians) and the growing proportion of pupils reaching the baccalauréat level: a pass rate of 80% by the end of the decade has been declared as a national goal.

In this process, however, it is becoming harder to say how much the change is due to employers' objective requirements and how much to an escalating race to be among the front-runners as selection criteria are tightened up. According to traditional theory, the education system serves as the first filter and employers tend to be less interested in the content of training than in its level, on the assumption that a higher level will be a selection process for the brighter people, particularly those best able to adapt and evolve.

Another factor is the shift towards service industries, which generally implies that training is less and less specific. What is happening is that we are moving further away from the concept that training can be directly related to employment. If we regard the relationship between the two as the essence of skills, this makes it decidedly harder to analyse those skills.

Skills and Europe

a) The prospect of a European skills market can first be considered in terms of forecasting the needs. A number of marked trends are apparent: the general raising of the standard of skills in order to develop the more competitive, higher value-added sectors needed to cope with the ever keener competition; a growing risk of the unskilled being excluded; the need for continuing training to adapt the skills of the existing labour force, since – with an ageing population – there are not enough new people coming in. To attempt more would lead to the kind of difficulties inherent in this type of forecasting, added to which there is the problem of a common definition and a common approach (to which we shall return). But we can at least hope for greater harmonization of national research in this field.

b) The second prospect is the transferability of skills in terms of content: are skills acquired in one country valid in another? A possible hypothesis is that the issue here is not so much the difference between jobs (on the supply side) as the

ways in which workers obtain their skills (on the demand side). Though not yet apparent at international level, this problem of transferability already arises at national level. In this connection, reference may be made to the comparative analyses by J. J. Silvestre (1986) who contrasts:

- the management of internal labour markets in large French companies, leading to the acquisition of skills that are specific and are therefore difficult to transfer outside the company,

- the situation on the German labour market, whose structure is geared more to trades than to companies and where trades are recognized and therefore easily transferable.

This difference is partly the reason for the difficulty of restructuring in French industry. Despite the expansion of continuing training, it "still tends to adapt existing skills, reinforcing the specific nature of employees' skills in France" (Verdier, 1991). This is no doubt a *de facto* barrier to mobility, irrespective of any rules and regulations. And there are others.

c) The problems created by these two approaches to skills at European level are linked to a third: the recognition – or non-recognition – of the skills of workers from one country in another country. CEDEFOP has already done a good deal of work on the subject and we need not dwell on the concerns leading to that work: the guaranteed free movement of workers, the provision of information for the potentially job-mobile and for employers, the harmonization of training policy and the widely felt need for a common language. Whether the aim is to find a single solution or multiple solutions to these problems, we are faced with two issues: how to state the objectives and how to choose the methods.

Stating the objectives

The first question to ask ourselves is on the actual impact of the principle of the free movement of workers on international mobility. Looking at the low level of mobility of most workers within their own countries, it might be felt that only certain categories (engineers and middle management in particular) will be seriously affected. The pressure for mobility is likely to come more from outside Europe, but this will raise quite different problems.

We should also ask whether the recognition of skills is an essential factor in this mobility. Other criteria (remuneration, the working and living environment) may be uppermost in the attitudes of employees and employers. Even in terms of skills, employers – at least the large employers – are likely to want to apply their own criteria for evaluation and investigation, for example as to the value of a given diploma.

Knowing that, despite the desire for progress with the social dialogue, the standardization of collective agreements will not come about tomorrow, whether migrants' skills are taken into account depends on the goodwill of the two sides of industry. They do not need a Community instrument, but they must be interested in information on current regulations in other countries. As for employers and above all workers, to be useful the information must be easy to access and consult – a problem, in view of the diversity and complexity of the institutions in the twelve countries.

For a better appreciation of the usefulness and nature of a possible Community measure designed to facilitate mobility (passport, work record book, skills portfolio, index of jobs), we should first consider the actual ways in which employers recruit and categorize the foreign workers they employ and the questions they and the social partners face.

In terms of training, there is an obvious value in consultation among those responsible for policies, as well as in a rapprochement of institutions. Here again, however, the value and nature of Community measures have not yet been specified, especially when it is a question of approaching skills from the viewpoint of competence, a concept whose definition is not always clear-cut, making international comparisons all the more difficult.

Choosing methods

The choice of methods requires us to consider the methodological problems posed by a European approach to skills.

The first obstacle to a comparative analysis of jobs and occupations is the infinite diversity in the division of labour, in other words the ways in which tasks are broken down among individuals, with wide variations from one enterprise to another and from one country to another. Apart from the differences noted in the workplace, we have already pointed out the differences in the manner of describing occupations as reflected in statistical nomenclature and job classification systems. Certain countries have no system of their own and merely use an international classification such as the ILO's. Others resort to a multiplicity of devices: to mention only the banking sector in France, there is nothing in common between the statistical classification, which groups banking jobs into five or six categories, the *Répertoire français des emplois*, which lists 17, and the classifications specific to each branch of banking (agricultural credit, mutual credit, people's banks), which list up to about a 100. How can an occupation be defined in any one country, then, and how can occupations be compared in several countries, unless in-depth research is conducted?

The solution adopted in CEDEFOP's work on job equivalence has been to bring representative partners together and ask them to arrive at an agreement on a common European definition. The value of this definition is above all that it is the outcome of consensus and can serve as a reference framework, but it cannot reflect the diversity of actual situations that we have described.

Another solution is to start not with occupations but with tasks, and this is the solution explored in CEDEFOP's experimental job profiles project. Based on the view expressed above on sectoral specificity, and making the initial assumption that there are sets of tasks corresponding to the creation of a product or the exercise of a calling, efforts are made to draw up a European matrix of tasks or sets of tasks. This is a solution to the need for a common language, and it also avoids the difficulty encountered when comparing occupations due to the differences between the methods of the division of labour. Even so, this difficulty inevitably recurs when the second step is taken and the aim is to compare occupational structures in each

country. It is hard to see how such a comparison could be reduced to simple terms.

It is also possible for the rapprochement of qualifications and classification systems to take place directly within undertakings or groups of undertakings, using the same job qualification methods, as proposed by consultants (for example, the Hay method). This would mean that harmonization would be based on private initiative, without waiting for Community guidelines or decisions.

More or less the same applies to the analysis of skills. As already pointed out, this has been the subject of a whole number of research projects, in many cases conducted by consultant firms for use by employers in their employment forecasting and planning just as much as for training. But we are still far from a standardized approach with a fairly fluid concept. The approach is still broadly based on subjective interpretation, coming in the realm of psychopedagogics rather than the analysis of work. These uncertainties contrast with the tendency already mentioned to place the emphasis on skills, especially behavioural skills. While it is not too difficult to identify such skills, their evaluation, measurement and comparison are quite a different matter.

These considerations point to the conclusion that, before introducing Community measures on qualifications, it might be better to specify not just the objectives but the target groups. The authorities and decision-makers, employers, workers and their families (as regards training) do not have the same needs. This would mean making a clearer distinction between matters relating to:

- rules and regulations, particularly the equivalence of diplomas in regulated occupations;

- statistical identification and classification, of interest primarily to the professionals; one of the questions arising here is on the relations between the European System for the International Clearing of Vacancies and Applications for Employment (SEDOC) and a possible European adaptation of the ILO classification;

- the provision of information to a wider public, which is undoubtedly necessary as regards training systems and diplomas, and perhaps necessary as regards jobs, although the needs must be specified as they relate both to jobs and occupations and to training and skills;

- comparative studies, which are all the more useful if they are conducted in a systematic, homogeneous manner, gradually helping to formulate a common language and serving as the foundation for other types of solution. All this, however, calls for efforts to synthesize and make the information transparent if the work is to be addressed to others besides technicians;

- finally, consultation among the social partners and among trainers, which may refer back to the work done under the other headings.

A preliminary conclusion is apparent from this analysis: in view of the complex and specific nature of the concept of skills, it will be harder in this field than in others to move forward along the path to European unification by bringing in rules, standards and wholesale measures. A differential approach is more realistic than the quest for a global approach to all the problems.

In matters of training, a mechanistic approach to the relation between training and employment seems even less suitable on the European level than it is on the national level. Training policy cannot be short term; it must have broader aims. Among those aims, it is legitimate to take into account the growing interest in skills, especially behavioural skills. But how is this to be done? It calls for progress with the analysis of methodologies and with the shared debate. But greater progress will probably be made through consultation and negotiation that will lead to a gradual rapprochement of views than could be made by introducing standardized measures.

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What do we mean by skills?

A hierarchy-creating procedure

In this article the author looks at the differing meanings of the concept of "skills" and defines them as the worker's relationship with his work.

In the work relationship, skills are the focal point in determining the job done as a result of training and the training provided by the job.

Skills serve to create a workforce hierarchy and to establish distinctions among its members and, in this respect, they stand for a social evaluation of the differences between jobs.

At first sight, everyone knows what skills are. Doctors are more skilled than plumbers and mechanics, less highly qualified than engineers. The relative standing of one category or another may be doubtful: are computer people more or less skilled than draughtsmen? – but there is an intuitive classification based on what is apparent, just as one could say that French women are redheads, Germans are orderly or Belgians like chips.

In these few simple statements, however, we already refer to different levels of analysis.

By skills are meant the abilities needed to hold down a certain job, in other words a worker's inherent qualities or the abilities demanded by the job itself. We have the worker's skills on the one hand, and the skills required in a job on the other. But how can the skills required in a job be defined if that job cannot be viewed in isolation from working qualities? It is not the job that is paid – it does no work – but the employee. Similarly, a worker's skills cannot be viewed purely as a body of knowledge, but only as the extent to which he relates to a job.

Skills, then, are the relationship between the worker and his work, in other words the job relationship. This being so, skill structures can be identified and we can look further: to the breakdown of workers within undertakings and in sectors of employment.

By skills, then, are meant a process that helps to create groups of individuals based on employment situations, and then to classify them and differentiate among them by defining a hierarchy. To the extent that such a classification determines their earnings and living and working conditions, skills are also the focus for the forms of identification and cooperation associated with working situations, as well as for conflicts that both unite and divide the workforce.

The result is of course that the classification of skills developed within undertakings or sectors of employment is sometimes the subject of discussion, negotiation or conflict. Many researchers, indeed, are wary of official codings in terms of skills in wage classifications and try to look at genuine skills, whose definition has not been distorted by negotiations reflecting the relative strengths and weaknesses of wage-earners and between employers and employees.

The aim in so doing is to legitimize skills over and above social relationships, in the final analysis to "naturalize" the hierarchies arising from those relationships.

This is the explanation for the gradual, discernible shift in the literature away from the notion of "qualifications" and towards the notion of "expertise". Is this not the basic concept of rational theory on the organization of labour? It was the expertise-based allocation of jobs that was the basis for Taylor's concept of the scientific organization of work and for Weber's definition of the rational legitimacy characteristic of the bureaucratic model. The move from qualifications to expertise appears to be part of an attempt to legitimize the place occupied by each individual.

The same applies when one attempts to distinguish between vocational skills and social skills. If this separation is seen as possible, the immediate assumption is that there may be skills which are not social and therefore naturally arise from techniques.

Yet what is the history of work if it is not the history of the social production of occupational activities and space? At the start of the industrial revolution, the stated aim of training men for mechanical work was to abolish vagabondage and, by offering a wage, to make people do a certain job in the spinning mills. In Belgium, Parliamentary papers[1] in 1886 described the schools where girls learned the domestic arts as providing occupational training, in that they served "to eradicate ideas of luxury and spending among women workers, teach them economic ways of dress and nourishment and instil family values in order to combat moral and economic disorder"! One year later, in 1887, the arrival of the steamboat brought about a serious crisis in Belgian fisheries, and it was decided to set up fishery schools "to improve the intellectual and moral standards of fishermen".

The occupational is the social: as Jacques Rancière says, "a real cobbler is not someone who makes good shoes, it is someone

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who does not pretend to be anything else but a cobbler".[2]

A matter of words

In analysing the use of the French word *qualification* = "skills", "working status" and "qualification" from the linguistic viewpoint, Josiane Boutet shows that it is a polysemous term. This arises from the fact that it is a label affixed on people from without, and those people then rework its meaning in such a way as to end up with other forms of categorization.[3]

Working status conferred by job classifications is an alienable category. You can have been in a semi-skilled grade and move up to a skilled grade. You can then go back to a semi-skilled grade. The change that then takes place is a gain or a loss in job status.

People also view themselves in the light of these classifications. They can accept them or refuse them; in other words, they can judge them. You can be a semi-skilled worker, for example, but have a qualification, or you can acquire the grade of a skilled worker without having a qualification. Achieving a certain job status is not synonymous with being or not being qualified. Being skilled is a quality peculiar to the individual, and is thus the field of qualification claimed.

Everyone knows, as J. Boutet also points out, that it is not just qualifications that are needed to move upward. Favouritism, arbitrary circumstance and luck also play their part.

The distinction made by the linguist comes close to the distinction made by the sociologist who, right from the academic origins of industrial sociology in the 1920s and the "movement of human relations in industry", specifically separates formal work from informal work. For both the linguist and the sociologist, the important thing is to understand the meaning attached by the parties themselves to their own activity in order to enrich the concept of "qualification".

Basically, the sociology of work has enjoyed academic freedom in that – unlike Taylorism – it no longer reduces the field of skills merely to the technical things that the worker is assumed to do.

This informal component of skills – made up of clandestine knowledge, the intuitive talent, tacit work and hidden cooperation – enriches the analysis of work situations in two ways, one succeeding the other over a period of time. At first the informal sphere is seen as the ineradicable aspect of workers' resistance to the Taylor-style organization of labour, or even the basis for subversive self-organization among the workforce, but then it is also seen as an "untapped seam of productivity", a form of worker expertise rooted in practical work that can, with the help of quality circles, be turned into functional knowledge. Indeed, in new forms of the organization of labour, there is a specific effort to take advantage of the informal knowledge acquired in this way. Basically, however, has the design behind any form of organization of labour ever been anything else? In the interpretation of the different spaces

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occupied by each person in employment structures, have not the ways of mastering and absorbing learning, rules, values and patterns of behaviour always been the determining factor?

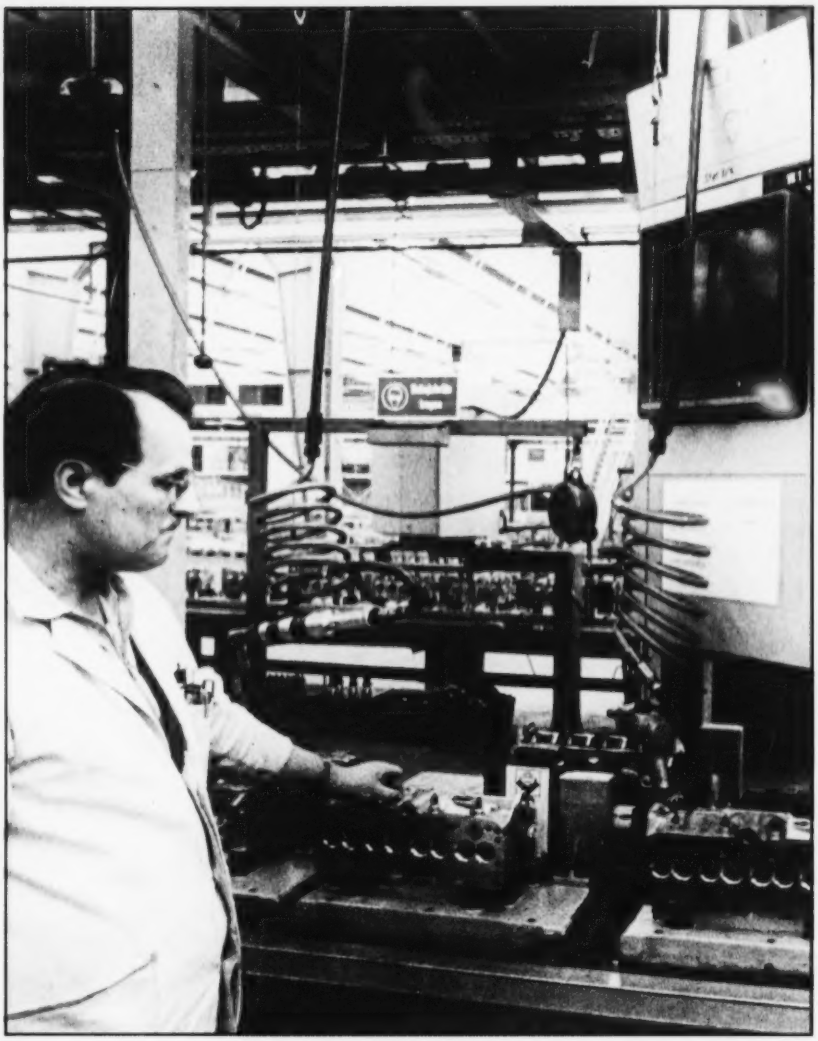
The forms of organization of labour, which are also forms of classifying and remunerating jobs, produce a twofold recognition procedure by different methods. On the one hand there is formal, institutionalized recognition, taking the outward form of grading and the scale of remuneration; on the other, there is the whole body of knowledge that is absorbed and taken for granted and is part of the social structure of work.[4]

Just like formal classifications, the informal use of a qualification defines the employee. In the theory of human relations, for example, it is the non-rational, non-regulated component which specifically defines a worker. It is his tacit knowledge that makes him the expert in quality circles.

Training and employment

Behind the words and all their ambiguity, beneath the complexity of skills, there is a clearly discernible tendency in the extension of employee relationships: a distinction is being made between the classification of workers on the one hand and the classification of posts and jobs on the other. The employer, indeed, has to take into account the prior definition of the workforce as forged by the education system, whereas employees have to fit in with the demands of the jobs they are offered. The labour market thus creates cohesion between the internal order of work posts and the social order outside the workplace.

To envisage skills as being at the centre of a set of methods of determining employment through training, and training through employment, would in the final analysis explain work situations as distinct from merely the job done, as well as the influence of schooling outside the school sphere. Education can be viewed as a process of socialization, and the workplace as a place of social integration. Although separate from work, the school is nonetheless necessarily linked to employment through the employee it trains.



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All the survey findings concur on this point: workers in similar jobs hold very different paper qualifications, and there is no close equivalence – despite sectorial, regional or national characteristics – between a given level and type of training on the one hand and, on the other, the job occupied. The link between the education and training system and the production structure is created only after it has passed through many forms of mediation.

For example, in the case of Belgium[5] there is a long-established, highly developed system of technical and vocational education, but even so a substantial proportion of people arriving in every sector of employment have qualified in the general education system. In various forms of industrial work we also find people with qualifications on the arts side, or even in teaching.

The surveys have helped to show that, with the growth of unemployment in Belgium since 1974, employers are far more demanding when they recruit new manpower. As time goes by, then, a higher level of education is needed than before to obtain the same job. The main finding in our surveys on structures of employment is still that they are fairly stable in terms of job classification (the relative proportions of skilled, semi-skilled and unskilled workers), whereas the level of school education of workers in the same period is considerably higher.

The comparative research aimed at understanding the relations between training and work has already been mentioned. The studies conducted by the *Laboratoire d'Economie et de Sociologie du Travail* at Aix-en-Provence-LEST are also rightly known and appreciated. The comparisons

of France and Germany[6] by Maurice, Sellier and Silvestre have become classics in their field. The authors, for instance, clearly show that in Germany skills are widely constructed on a job apprenticeship system common to employees in the same family of jobs. In France, on the other hand, skills are based on the level attained in general education and seniority in the workplace. Maurice, Sellier and Silvestre therefore distinguish between two spaces: the qualification space in Germany and the organizational space in France, arising from the different methods of structuring the school system, the production system and working relationships.

While this aspect of research on France and Germany is now well known, there are others that are rarely highlighted. Maurice, Sellier and Silvestre have also shown that, contrary to the general belief, the greater professionalism of training in Germany and the closer equivalence between school diplomas and employment by no means imply that workers are better adjusted to their tasks, nor do they predetermine the use that is made of this training in production. "On the contrary, vocational training is far more representative of the type of relationships maintained among workers in the performance of their tasks. For example," the authors add, "rather than ensuring that workers are closely adapted to their jobs, training lies at the heart of the social relationships which, within each workplace, are the mediating factors between technical requirements and organizational practices."[7] "The qualification spaces" in German companies and the "organizational spaces" in French companies are produced by different social relationships, mainly determined by the procedures in their education system. It could not be concluded, however, from this observation that adjustment is better when technical learning predominates in school education as in Germany or when general subjects predominate, as in France.

These few observations combined focus on an essential point: the criterion for skills is not to be sought in the nature of the tasks performed by workers, but rather in the set of relations among them.

Training and employment are the pivot of these relationships. The determining factors in skills are found outside work, more particularly in the education and training system, but they can be manifested and sanctioned only by relation to work.

Skills are not, however, reduced to any of the terms of this relationship. As we have already mentioned when discussing our surveys, a higher level of education of workers is not enough to transform the structures of employment. We then find that academic diplomas suffer a decline in value, the main victims paradoxically being those who do not hold such diplomas and are placed at a disadvantage as the criteria giving access to employment steadily climb higher. It is not enough to increase training to increase skills. Training is one factor in this relationship but it does not dominate it, and skills cannot be reduced to either of these two terms: in a way skills govern, constitute and define them.

Working and consuming

Skills, therefore, are a broader concept than training. They include social relationships transmitted by the school at the same time as knowledge and job-linked social relationships that are also learned at school, in the family, through the media, in other words outside work just as much as in the actual doing of a job.

Just as the split between technical and social learning is not created in the school, nor is it created in extra-scholastic socialization. Everyday experience provides only scraps of knowledge, and working transpositions are far from transparent. "Knowing how to work and knowing how to consume are related to the same forms of learning and to the same skills," notes Pierre Rolle[8]. The ability to project one's path in the future and in consumption are powerful motives for learning, for finding a job and then to climb up the promotional ladder, i.e. "to qualify".

Skills, then, can be defined on two levels. On the one hand, they are the ability to perform acts that convey a message of professionalism to others. Empirical knowledge cannot be divorced from its social manifestation, from the day-to-day demonstration that one is qualified to exercise that knowledge. Being skilled is also to profess to be skilled without forgetting the patterns of behaviour and life styles associated with those skills, which the person has already been actively prepared for by his environment and school.

Skills also serve to make distinctions between employees, as Pierre Naville has already pointed out.[9] Skills are an operating factor produced by social judgements and used to classify people. Like the social evaluation of differences between jobs, skills are at the centre of a set of social determinants that extend beyond the narrow space defined merely by a person's job.

Being both the act of grading and the result of this act, skills form part of this mechanism essential to every society: the function of classification. From this viewpoint they are what determine classifications, which are produced by social judgements and used to make distinctions among employees.

It is evident that it is because skills define work in the process of change that they do not lend themselves to categorization.

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New educational strategies for moulding our future

The evolution of the state of human resources is interrelated with that of socio-economic systems. However, the profound rationale of such an interrelationship can be captured only when regarding the events of this century in a perspective of epochal and revolutionary changes. Our century has to be regarded as a transition of phase in the configuration and working of our socio-economic systems, from rural and relatively stagnant and poor societies, with restricted access to education, to societies characterized by high productivity, affluence, the ability to innovate, and mass education.

If one regards educational phenomena in such a long-term perspective, the distinction between know-why and know-how appears to be the important, but historically contingent, inheritance of such a transition. Once we take this into account while facing present problems, it becomes clear that the importance of vocational training is over-emphasized, while the real issue of our age is that of redefining profoundly our educational strategies.

Coping with this task is a real challenge of exceptional complexity, that must be faced through deeper and more radical reflections and, above all, by constructing collective and structural efforts around them.

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The epochal changes in the economic environment

The shocks of the seventies produced important changes in the competitive strategies adopted by the companies of most developed countries. Such changes, towards what might be called "innovative competition", were not the first ones to occur in the course of this century. The traditional competition, based on the reciprocal curtailing of prices, which prevailed in the nineteenth century and exists now only in economic text books, had been fading away throughout this century, replaced by various forms of oligopoly and, above all, various patterns of imperfect competition, based on quality differentiation, marketing, advertising, customer service, etc.

These former changes were almost completed on the eve of the seventies, when Western countries found themselves exposed to a triple shock: the advent of a period of unstable currency exchange rates, the oil shocks, and the emergence of synchronized restrictive macro-policies, adopted without any coordination by the governments of industrialized countries in response to oil shocks. This not only produced growth decline, higher inflation and increasing unemployment, but also established the basis for a new transition in the competitive patterns. The need for the firms to restructure and reorganize themselves induced them to learn how to change.

While until then innovations were occasional, concerned mainly the production processes, and were highly compatible with the existing labour organization, requiring only small adaptations of the labour force qualifications, the innovations that began to be created or adopted since the late seventies mainly concerned products, or processes together with products, and required a radical change in the organization of the companies and a re-definition of the whole system of labour relationships, both within and between firms. Decentralization and sub-contracting not only diffused, but changed their role, becoming a new form of network cooperation between firms. This way of arranging inter-firm relationships, which was initially a way of seeking defensive flexibility, rapidly became a source of continuous innovative patterns. Innovation thus became a new form of competition in itself in many sectors, while other sectors were increasingly involved as clients in innovation.

The historical macrochanges of phase considered above – that from pure price competition to a mix of oligopolistic and imperfect competition, and that from the latter to "innovative competition" – have produced, and have been accompanied, permitted or determined by epochal changes in the domain of human resources, the number of people who, in the course of this century, have reached a literacy level and the people who have obtained an education are likely to be by far a multiple of the people who achieved a similar result since the beginning of written culture prior to 1900. Similar considerations are likely to apply to people who, throughout the century, have worked in non-agricultural activities and/or have migrated from the places where they were born.

If, when considering the issues of manpower qualification and of education, we do not insert our analyses and our policy ideas in such a framework, we would be unavoidably bound to narrow-minded thinking.

During the period of the diffusion of oligopolistic/imperfect competition forms of organization (often wrongly referred to as Fordist/Taylorist models of production/

competition) the quantitative core of the labour force was, almost everywhere, poorly educated and, on the whole, poorly qualified. However, the recent memory of poverty and the opportunity to raise rapidly their living standards transformed workers into people highly motivated to effort and, on the whole, respectful of industrial discipline. Mass standardized production, on the other hand, corresponded to the requirement of upgrading homogeneous consumers, while the ways of arranging the corresponding production processes fitted quite well with the prevailing patterns of the labour force whose features have been recalled above.

Oligopolistic/imperfect competition which diffused throughout this century (accelerating its speed of diffusion after the Second World War) appeared to be a superior form of social and economic organization, from the point of view of both firms and workers, in comparison with the pure price competition models that prevailed in the early stages of industrialization. The latter ones, in fact, were marked by a high degree of instability, both for firms and for employment; required, and pushed towards, a very high rate of labour force exploitation, which tended to produce negative feedbacks on the quality of the labour force; was highly destructive in terms of profit erosion; produced a high level of insecurity for firms and a high number of industrial failures.

Oligopoly partly derived from what remained of harsh industrial warfare. But, more generally, the changes in the competitive strategies which emerged and diffused throughout this century reflect the tendency to escape from the high instability of the previous forms of competition. Quality competition is a way of constructing sheltered and relatively stable markets; it was partly deliberately pursued, partly permitted or stimulated by the options opened by the limited, but important inventions and discoveries matured since the second half of the 19th century.

The corresponding changes concerning human resources

The most central issue from our point of view, however, is the fact that this new form of competition required, or benefited highly from, the creation of relatively superior and more protected markets for the labour force. In fact, everywhere, the diffusion of this new form of competition coincided with, and was based upon, the creation and/or the consolidation of internal labour markets, where workers were attracted and motivated by long-term labour contracts and fair prospects for upgrading along the companies' job ladders. The relatively poor state of education pushed toward a relative standardization of labour tasks, with a limited number of people in charge of control and supervisory tasks, while the required qualification of the bulk of the labour force was basically provided on the job, by an explicit use of a routinized environment.

When involved in the very heart of a process of change, it is extremely difficult for the analyst to regard the process itself in a correct perspective. Around the sixties many people, connected in some way with the OECD, were concerned that a lack of educated people might constrain economic growth. The scholars and policy-makers that favoured the need to develop and use manpower-requirement forecasting were probably disappointed by the growing rate of unemployment among educated youth that manifested itself throughout the seventies. This was in fact regarded as a failure of their analysis, while, if we regard such events now, many experts would be likely to consider it as a simple timing error.

On closer scrutiny, the supporters of the manpower-forecasting approach appear now to have been wrong in so far as they overestimated the possibility of maintaining the high growth rates which prevailed in the fifties and sixties, paying too little attention to the qualitative transformations which were in progress in the economy and in society.

By the end of the sixties a new wave of young people with higher educational standards was being generated, as a secondary result of the overall positive economic changes which occurred since the end of the Second World War. The high level of unemployment experienced by educated youth throughout the seventies is the result of both the decline in the economic growth rate and the broadening of more educated cohorts, which did not meet the requirements of the old method of organizing production.

However, the imbalance did not last long. The restructuring processes that were both the cause and the result of the new transition of phase towards innovative competition, tended, during the eighties, to change the structural requirements by education of the labour market; so that, at the very end of the period, there was on the whole a redistribution of specific unemployment rates towards the less educated youth (learning aside occasional national specificities).

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In other words, we are likely to be witnessing a new wave of dynamic interaction between the patterns of education of the bulk of the labour force and the ways in which economic activities tend to be organized. It is the availability of more highly educated people that has fostered the development of innovative competition, but once this phenomenon has tended to consolidate and expand, relative shortages of properly educated people are, or will be likely, to occur. Indeed, when we enquire about the labour force features that the firms would like to have now, it is easy to discover that they want such features as the ability to adapt flexibly to unforecasted shocks, to understand what they are doing, to have a perception of the whole of the activities of the firm, to relate to other workers and communicate, etc.; in other words, they would like to have, for the whole of the labour force, the same features and technical knowledge that are usually required good managers (the only difference being that they do not want to give them the same pay). Although this position is clearly naive (and this representation of it slightly exaggerated), on the whole it does not misrepresent the trend of requirements for the present phase of innovative competition. In this sense it is clear that what is basically required is more education rather than more vocational training.

The supporters of the manpower-forecasting approach had the merit of questioning and challenging the adequacy of the schooling system, although they did it basically on a purely quantitative basis. Now it is time to reconsider the adequacy of education systems from a qualitative and strategic point of view, starting from a deeper comprehension of the epochal changes which have occurred and which are likely of occur in the future, in direction similar to, or consistent with, those outlined here.

The interrelationships between economic and cultural development

The problem of how to produce, nurture, and maintain human resources should be regarded in this revolutionary perspective of epochal relevance. Notice that I use here the joint terms "production, maintenance and nurture" of human resources as a more apt expression for indicating what is usually referred to as "education" and "vocational training", which are almost always treated as interrelated but distinct issues. My basic argument is, instead, that this distinction is not appropriate to the present environment. I regard, in fact, the distinction between education and vocational training as a basically distorted inheritance of the transition period between selective education and mass education.

The distortion is manifold. We cannot confuse a contingent, although long-lasting, necessity, dictated by the contingent requirements of a changing society, with a substantive and permanent feature of the formation of human resources.

The enormous and unprecedented development that our societies experienced in the course of this century is by no means due to the fact that mass production technology, appearing at the beginning of this century, has fostered an enormous increase in productivity; such an increase would not have been possible through the "spontaneous" improvement of the quality of human resources, such as would have prevailed in a world characterized by the simple broadening of craftsmanship and traditional education along pre-existing trends. Therefore, the advent of mass production, and the associated organizational patterns allowing the fast and intensive exploitation of an illiterate, uneducated and untrained labour force (what is labelled "Taylorism" and "Fordism"), introduced a rupture and an imbalance in societies. Many pessimists, swayed by a short-sighted appraisal of such phenomena, extrapolated the Smithian view of an increasing division of labour that would have condemned the bulk of the labour force to stupidity and dull lives.

However, this latter view underestimated the feedbacks that would have been generated by ensuing economic affluence. Most of the newly generated wealth directly and indirectly produced a widening of the fruition of culture, encompassing formal education and training, although this happened with an obvious time-lag. The outstanding increase in education that characterized the second post-war period has thus to be regarded as the lagged systemic response to the previously introduced imbalance. As it is quite common with epochal historical imbalances, this systemic reaction passed through an overshooting phase, when in most modern industrial systems a trend appeared towards high unemployment rates for educated youth. However, as was already the case for the previous entrepreneurial strategies, the new innovative strategies may be regarded as a means for economic entrepreneurship to adapt to, and exploit, the features of the new qualitative/quantitative structure of the labour force. In other words, the restructuring period of the late seventies and eighties and the transition towards the present situation of prevailing innovative competition may be regarded, once again, as a new form of adaptation and ability to exploit the human resources, such as they are available (unfortunately it is impossible here to go through the changes and patterns that characterized the evolution between the two considered stages, over time and across countries, sectors, firms organizations).

During the eighties there have been interesting efforts to improve the quality of the labour force. Governments have devoted a growing amount of resources to support vocational training. Employers appear to have done the same. Upon closer scrutiny, however, different aims and different contents appear to correspond to such apparently similar actions.

Governments were basically urged by the belief that more training would alleviate unemployment. Such a belief, induced by the observation that less qualified people have higher unemployment rates, is likely to be false at the systemic level. Aggregate output has been substantially constrained during the eighties, and this forestalls greater employment. More training might even worsen the situation, since a smaller number of more trained and productive workers are needed to produce the same output. The training efforts are thus likely to have the effect of redistributing the probabilities of finding jobs. Firms, on the other hand, have tended not only to replicate the type of vocational training they were accustomed to provide, but to enrich it with educational content, consistent with the changing requirements imposed by the higher rhythm of innovations, which demand greater comprehension of activities.

The wrong distinction between know-why and know-how

Let us consider briefly this traditional distinction between education and vocational training in the perspective of the dynamic imbalances considered above. This is the second distortion I referred to earlier.

It is commonly believed that education has to do with "know-why", while vocational training has to do with simple "know-how". Both beliefs are basically wrong or, rather, contingent to the past historical phase. It is certainly true that, in most cases, vocational training presently consists of the transmission of know-how, with little or more attention to that of know-why. However, this is the intelligent and necessary parody of the training of craftsmen such as has existed since the late Middle Ages to the twentieth century. Apprentices, such as those in artisans' workshops and in guild systems, were there to learn all of the aspects and the features which would have characterized and "marked" their future adult and independent,. though regulated, activity. Therefore the apprenticeship was a specific form of education.

The features of the specific pedagogical strategy adopted in the case of craft apprenticeship have not to be confused with the substance of the knowledge actually transmitted. In a given cultural environment and system of motivations, the previous transmission of know-how may be, and actually has been, an instrument to establish the motivational, operational and experimental basis upon which to insert the transmission of substantial knowledge, that is, of know-why. I first teach you how to do a certain thing, and thus, when you are convinced you are able to perform the task and are amused by it, I make you discover why you do things in a certain sequence and fashion; that is, the implicit "project" that you conceive and develop. And when you have grasped this, then you will be able to cope with the many variances of the problems that you will meet. There is virtually no case in which the learning of an "art" did not have these features. Obviously not all of the apprenticeships reached the goal, but this was the desired target.

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Most of modern vocational training selected, and reproduced at mass levels, only a part (the initial and less noble part) of the old educational process of training, supplementing it with slight pieces of written knowledge, which basically replicated the transmission of know-how rules. It was an intelligent, although impoverishing and cruel way of putting people into conditions of work, with a consistently designed technology, on a large scale. The shortening and the impoverishing of training, and thus its emasculation as an educational process, was the price to be paid for mass employment with mass production technologies.

However and unfortunately, the conception of education as a transmission of know-why is equally distorted. It is not distorted as long as it expresses what education should be, not what education is at present.

The presently prevailing educational patterns reproduce, with historically marginal, although conspicuous adaptations, the pedagogical features and strategies of previous elitist-bourgeois models of school. Such models were based on literacy and on the possibility of transferring to pupils abstract models of the real world, together with behavioural rules, basically consisting of compliance to a disciplinary system. On the whole this makes a lot of know-hows and very little of know-whys, although with the possibility that some of the models provided could bring a limited proportion of the pupils to understand latent or implicit causal relationships, that is, know-whys. As a matter of fact, the know-whys are transmitted, and even then not always, only at university level.

During the epochal transition of which this century has consisted, the extrapolation of the pre-existing model to mass education has produced enormous damage and enormous benefits.

There is no space here to go into detail. I shall limit myself to few remarks about the main results which now require adequate reactions.

School is increasingly boring

School drop-outs are the conspicuous emerging peak of an iceberg of failures and shortcomings.

Until now, the main reasons for dropping out from school have been identified by psychologists and sociologists as the result of a misfit between the social and cultural reference systems of the pupils, which determine their motivations, and their communication skills on the one side and the system of incentives, rewards and communication patterns upon which the school is based on the other side. This certainly has been, and still continues to be, correct.

However, there is another, new, misfit factor that has to be spotlighted if we want to update the processes of training of human resources in a way consistent with our changing societies. This factor, which not

only produces a part of the drop-outs, but which concerns and affects the large majority of all the pupils attending school, even those who are successful, stems from the fact that school has become, and is increasingly becoming, boring.

The causes of such increasing boredom are at least threefold (I insist on the term "increasing", since it is because of this that a major imbalance is likely to emerge sooner or later).

The first one is connected with the cultural codes which are mainly used in school. Here again psychologists and sociologists have studied the problem in depth, but focusing their attention on drop-outs and on other marginal youth. Without forgetting them, however, my main concern is about the majority of pupils, whose cultural codes are increasingly inspired by media different from school, such as TV, newspapers and magazines, various forms of youth groups, etc. Such media project upon youngsters' minds images of society, and even instruments to deal with adult problems, that appear to them much more effective than those conveyed to them by school. They tend, therefore, to regard school as a compulsory, though obsolete duty, rather than a place of education and challenge. The sad thing is that, though I do not believe that the messages conveyed by the abovementioned media are correct and effective, the feeling of the students is basically right.

The reason is to be found in the second factor to be considered. Most of the knowledge which is transmitted by school is irrelevant as far as their ability to deal with the problems of adult life is concerned. Not only school, on the whole, tends to transmit basically "flat" images of the problems and of the present state of society – "flat" meaning here something which is descriptive, summarized, non problematical, "told" as a story-but there is a growing lag between the evolution of the real world and the updating of the images of the world which are transmitted by school.

Some of the causes for this have to be found in the third cause for "misfit". As long as the real world evolved and the available knowledge widened and deepened, the delayed updating of curricula has mainly consisted until now in minor reshufflings and in major additions. This obliged pupils to work increasingly harder, crowding out space for imagination and stimuli (incidentally, neither addition succeeds in updating the knowledge about the real world and the endowment of instruments to face the problems posed by it, nor does the bias towards past knowledge give the pupils a sense of history.

Focusing on "core people"

The present debate about education and vocational training unfortunately pays too much attention to two points. The first one concerns the requirements of the economy; according to it the problems are basically seen in terms of possible bottlenecks of the labour supply with respect to labour demand requirements. Education and training are thus regarded as functions of the need to provide, for example, more engineers or how to produce in a short time well defined specific skills.

The second point concerns a problem which is located on the supply side of labour: how to deal with people who are unemployed on account of their poor skills.

Both problems deserve attention, but the major concern should be how to educate and/or train normal people for normal jobs. In other words, the major concern should be about the core of the environment and the core of human resources. How should they be dealt with? How to educate the majority of people to behave better in life, to be happier and to be more productive in the majority of jobs? And, above all, how to transform adolescence into a non-boring preparation for adult life, and how to allow and stimulate people to use their brains throughout their lives?

We have seen earlier that what is mainly required by modern economic activities is effective education rather than training which is to be regarded increasingly as a contingent mapping of general knowledge on specific environments and problems. On the other hand, it is now to be considered an achievement of pedagogical and psychological sciences that people are mainly attracted and stimulated to react and learn when facing new, complex and relevant problems. The first statement asserts that we should be concerned with education rather than vocational training, while the second one suggests how to deal with it. I shall limit myself here to a few remarks about what and how to teach.

The core elements of future educational strategies

Most people are potentially able to cope with abstract thinking, that is, with symbols and models; they are potentially able to use their imagination and, fascinated by it, able to communicate and establish relations between themselves and their surroundings. What differs greatly among people – according to age and to the socio-cultural environments – is the degree of consciousness about these abilities and the degree of complexity of what is treated by them.

Education has to do, first, with the emergence of consciousness about the abilities considered above. Such abilities exist and improve up to a certain level basically in the form of know-how while the emergence of consciousness goes hand in hand with the conceptualization of the reasons why things are done in a certain way and whether and how could they be done better or worse in different ways. This amounts to saying that the first step of an educational process has (or should have) to do with the recognition of patterns and of links between, and possibly reasons and causes for, such patterns.

This step is very important. On the one hand, it has to do with reinforcing the self-confidence of the pupil and with his motivation to learn. On the other hand, it conveys to the learning of the subject matter a series of key concepts and feelings which constitute the fundamental bricks upon which to build up further educational steps. Among them the most important are:

(1) The concept of reality as multiform; a concept induced from the fact that things may be done in more than one way and/or for more than one set of reasons, and that one can behave differently either because of different goals or different environments, or because of different models of the relationships between objects and individuals;

(2) The concepts of consistency and relevance, upon which to build the ability to select, to establish hierarchies of importance, to recognize errors (perceived as relative to the problematical environment) and to feed them back in terms of corrections;

(3) The concept of learning as a time-consuming, cumulative and open process.

The know-why which is possible to extract from a given set of know-hows is limited. The use of know-hows has thus to be regarded as a dialectical device to (motivate to) attain know-whys and to broaden and deepen their range. Such a device is fundamental in the early stages of education, but its importance diminishes as the pupil learns to master abstract knowledge and becomes able to build upon it.

Since learning begins when individuals are young and its upgrading (the shift from know-hows to the first know-whys) and its consolidation (the shift from simpler know-whys to more complex ones) when they are adolescent, the success of the educational process is highly dependent on their affective and psychological conditions, which do not depend only on the school climate. On the one hand, this might point to integrating school activities into a wider network of concerns related to community well-being. An apparently more limited, attainable but not necessarily easy goal, however, might be that of transforming the school environment in such a way as not to make it, as is often not the case at present, a further (or even autonomous) cause for distress, but rather an instrument for compensating and alleviating it.

Among the final achievements of the educational processes the importance of the following should not be underestimated:

- the consciousness that we represent things through models and that these consist basically of structured textures of links between the assumptions and their transformative elaborations;
- the understanding that most of what surrounds us is part of, or constitutes, a system, characterized thus by relevant sets of synchronic and diachronic interdependencies, that, in particular, most cultural, social and economic facts are a human artifact, that depend on how human beings learn, invent, understand and behave;
- the feeling that the future is partly undetermined, since it depends on fundamentally uncertain events belonging either to the sphere of nature or to that of human action; that, however, the future can, at least in part, be influenced and moulded by human actions, and thus by us;
- the capacity of accepting and facing uncertainty. This implies the ability to use imagination in order to envisage possible futures and to use information, experience and knowledge in order to give order and meaning to such conjectures;
- the capacity to be curious about other people's feelings and behaviour, to listen to and to relate to and respect them. Notice that this implies a balanced attitude towards, and respect for, the fruition of the different forms of representing knowledge and feelings, from intuition to formal deduction, from science to art. In particular it implies not so much the need to read extensively, but to capture what is expressed by a text and the reasons why what is expressed is, or is not, effectively expressed;
- the ability and the readiness to appreciate the good things in life.

A common European effort is needed

The pedagogical and cognitive strategies for achieving this and the way of conveying them in appropriate curricula is the task confronting us.

It should be clear by now why I believe that we need a brand-new educational strategy. What I want to argue here is why such a strategy should be conceived through a deliberate effort at an appropriate international level, that may be, initially at least, the European one. Before outlining how this effort could be made, a few further considerations deserve some attention.

There is an increasing gap and lag between the cultural and technical knowledge which ripens on the frontiers of fundamental scientific, technological, economic and social transformations, the perception of it, its selection and suitable transfer into educational (and even vocational) curricula. Although this is basically due to the exponential rhythm of transformations themselves, two major factors aggravate the situation.

The first one is the lack of agents actively devoted to establishing appropriate links between the sites in which new knowledge and know-hows are created and those where they should be reproduced and diffused; "actively" since what is implied is not only monitoring and transferring, but, above all, selecting what is more general from what is more specific and conveying it into pedagogical messages and curricular changes.

The second one is the autonomous role which has been emerging for the people and for the institutions which are in charge of the management of educational and vocational activities. The spread of such activities and the consequent setting up of structures and organizations have induced the formation of a network of interests, cultures, and power relationships, which fundamentally determine the shape and contents of education and training, and of their evolution, in a way which is not necessarily the best. Often these cultures and interests are not perceptive, consciously or unconsciously refusing to establish suitable sensors for the understanding of what should be changed, and thus actively or passively slowing down adjustment processes.

The potential dangers of such factors do not need to be stressed. What deserves to be stressed, instead, is the international dimension of the problems just raised.

Should exceedingly differentiated adjustment paths or reaction lags prevail among different countries, above all, the major European ones, negative consequences could be expected both from the point of view of imbalances in competition, in product markets as well as in labour markets, and in political cohesion.

This helps explain why there should be an interest in promoting internationally coordinated initiatives on such issues. It is time now to initiate major change, which on the one hand could reflect the issues raised in previous paragraphs on pedagogical strategies, and on the other should redefine the list, the priorities and the "selection" of the basic knowledge to be transmitted. But this implies a very delicate selection procedure, which requires the availability and the deliberate and coordinated effort of the best scholars. Such an effort must be organized by the governments. It would be preferable if the European governments collaborated on this since it would be a unique chance to construct a common cultural framework.

Qualifications: a social construct

Factors in the continuing reshaping of qualifications

Factors playing a part in the continuing upward movement of qualification levels are explored in the first part of this article. These permanent changes in qualifications are then analysed as the outcome of the negotiation processes which are set in motion as a way of reaching agreement on their titles, definitions and validation and specifying how they can be passed on and put to use. Skills may then be seen as a social construct (sociologists' point of view) and as a formal investment (economists' point of view).

Qualifications are currently in a state of flux and need to be adapted, raised or recast on a permanent basis. While some trades have been undergoing deskilling for some time, the overall trend is towards a rise in the qualifications acquired by workers as well as those required by employers.

Greater change at a faster pace

Several factors have played a part in devaluing skills and experience and continuing to raise the thresholds of entry requirements for jobs. They account for the upward growth of the qualification pyramid. For some people, however, an "onion" shape provides a better illustration of the outcome of these changes since it provides a better picture of changes in the demand for skills, i.e. rapid growth and diversification at the higher levels and continuing contraction at the bottom.

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The form which the demand for skills takes is obviously shaped by the faster pace at which sciences and technologies are spreading and evolving. This evolution is reflected by the continual renewal and diversification of production circuits and perhaps especially of the information and communications circuits needed by an economy which is becoming global. It is often said that the world now contains more living scientists than the total number of their predecessors over the centuries. It is nowadays said that scientific and technical discoveries renew the range of knowledge and expertise required for work in the various sectors every 5 to 10 years. Whatever the sector, innovation is transforming the design of products, goods and services which are incorporating more and more intelligence and culture. Innovation is changing production, accounting, communication and marketing methods: this is leading in turn to changes in the ways in which activities are structured and consequently to changes in jobs and skills. Outside business, these innovations are not just changing life as a whole but also the problems facing individuals, families, communities and societies.

Culture also has a place among these forces for change. It is becoming a production force. In the past, cultural development seemed to follow in the wake of economic development promoting patronage. At present the forces seem gradually to be moving in the opposite direction. Since industrialization began, three main stages can be pinpointed in terms of the production forces at work: energy and the domestication of its various forms bringing about the industrial revolution, science and technology during the second stage and finally culture and the inclusion of a cultural strategy and dimension in the renewal and extension of the range of products, services and activities. The development of cultural industries and the marketing of increasing numbers of cultural goods and services, as well as advertising, go some way towards explaining this trend towards increasing aesthetic content which is now part and parcel of all production sites and activities.

The establishment of increasingly complex information and communications networks and the resultant development of remote command and control possibilities as well as the proliferation of networks promoting the circulation of people, capital, currencies and goods undoubtedly provide the best explanation of burgeoning world-wide trade, the globalization of the production system and therefore the increasing use of high-quality and increasingly highly skilled human resources. These days businesses are also structured as networks. Attempts are being made by major enterprises to redevelop in the form of profit centres and more or less autonomous units. They use outside suppliers or sub-contractors wherever possible. Management problems are becoming more complex and decisions have to be based on increasing amounts of information on in-house flows, markets, customers, suppliers and sub-contractors.

The rapid shift of less skilled and heavier activities generating greater poilution to the less-developed countries where society still has little control over investment can be explained by the growth of these worldwide networks and worldwide honeycombs of firms. Exports of deskilled jobs from the North are playing some part at least in the accelerated industrialization of some countries of the South.

The de-industrialization of some northern countries is causing a shift towards service-sector activities and jobs: towards utilities and distribution (commerce, trans-

port and communications), luxury goods, financial services (banks, insurance, taxation) and service products (production, teaching, research and information services and all those firms producing and disseminating knowledge and culture). The service sector as a whole now accounts for over 60% of jobs in the EEC.

Service-sector jobs are also proliferating in industrial firms: what is sometimes called meta-industrialization. In their quest for economies of scale or range, these firms are building up technological and scientific research divisions, analysis laboratories and advertising and marketing services. When they cannot do this themselves, they call on outside services specializing in these various fields. The line between industrial and service firms, in the same way as the line between goods and services, is becoming increasingly blurred as material supports are helping to industrialize services and intelligence is being incorporated in production and consumer goods.

Qualitative changes in tastes and aspirations, due to some extent to advertising and the media, are also helping to change the skill pyramid. The increase in leisure time due to reduced working hours as well as higher educational and cultural levels, higher incomes (due largely to dual incomes in households where women work), the search for a better standard of living, the importance attributed to personal appearance and the stress placed on the quality of the environment and good working conditions as well as personal rights and, in particular, the right to be different are also playing a part in this change.

This trend towards a global economy has meant that product quality and reliability need be increasingly high in the same way as productivity and competitiveness.

One of the many other factors which have played a part in raising qualification levels in the most advanced societies is the need to find solutions to proliferating and worsening social problems and risks. For instance, numbers of accidents are increasing not just on the road but also at home. People are living longer with the result that chronic disease is growing. New epidemic diseases such as AIDS are appearing. New plagues such as drugs and violence are sweeping the world. Improving quality consequently means making every effort to reduce risks and resolve the problems which accompany rapid change and which take place at an ethical, scientific, technical, economic, technological and ecological level as well as a political, cultural and social level at one and the same time. Paradoxically, therefore, social problems and risks are increasing for all types of people in the wealthiest and most dynamic societies. Over and above unemployment, the constant need to redeploy and adapt skills and the ever faster pace of change are attacking the various communities at the roots and gradually placing all the institutions and groups within a society on a precarious footing.

If social needs, as well as those resulting from growing internationalization and economic groupings of nations (for instance the Europe of the future) are to be met, the range of skills which can be called upon will have to be extended.

The risk of a dual society is obviously one of the less agreeable results of these challenges. In a more competitive and more rapidly changing society, the pyramidal form of qualifications (seen in the shape of an onion) leads to ever stricter selection and therefore increasing "rejection" especially as the distribution curve of natural skills and intelligence quotients continues to show a normal distribution (Gauss curve). This is undoubtedly one of the main problems with which our societies are and will be faced. As the requirements of society as a whole rise, the increasing number of people left by the wayside and marginalized may well make social problems in the areas of work, life and accommodation more acute. This will obviously have an impact on the skills which will be needed to solve these problems.

Changing strategies of production and organization

If we are to understand what is happening in the area of qualifications, it is not enough to show that change is accelerating but that basic changes are taking place in production as well as technological development strategies.

Until recently, scientific and technological advances promoted mass production. At present, as Georges Gilder has pointed out, SMEs can put scientific and technological discoveries to profitable use in medium-sized or even small production runs. The same is true of reprogrammable machines, information and communications microtechnology and technologies assisting with design, management and decision-making. These innovations do not just make it easier to manage information flows in keeping with increasingly voluminous production flows but help, in particular, to reduce the scale of production and differentiate products. The same is true of the miniaturization of apparatus or the proliferation of new materials. This is the debatable, but extremely well-developed, theory put forward by Michael J. Piore and Charles S. Sabel who provide a number of examples.

This fundamental change in production strategy (the shift from an economy of size to an economy of range) and in technological development strategy (multi-purpose and "reprogrammable" machines) is obviously linked to increasing competition as well as people's tastes and aspirations and the needs of communities and institutions. These changes have undoubtedly been advanced by the far-reaching recession of the 1970s.

These trends are summarized in Table I below. In Tables II and III an attempt is made to grasp their implications firstly from the point of view of organizations and then in terms of the development of work and qualifications.

By way of conclusion, it seems possible to state that the level of qualification and competence required from workers is increasing. In overall terms, there is a shortfall especially in the top qualification levels. In some cases, however, workers' qualifications are superior to the qualifications actually needed or the requirements laid down by employers. Qualifications are in a flux, however, as a result of the high speed of change in society, in the economy and in science and technology. In these circumstances employers are often happy to recruit workers who are overqualified as regards the work to be performed at a reasonable price. Bearing in mind that those who can do the most can also do the least, employers feel that workers who are overqualified now may provide for

smoother adaptation to future developments which cannot always be anticipated. In some cases, therefore, it is not so much the nature of the qualification as the level of the diploma which is the reason for recruitment, if this diploma attests to the worker's autonomy and creativity.

The development of qualifications is not just a question of numbers, however, since a far-reaching diversification is also taking place. Not all the experts agree that this is the case. According to some experts qualifications will become increasingly comparable as computers invade the various sectors and stages of production. According to them all operations will be computer assisted. Nothing is less certain and the trend is more towards the diversification of knowledge in keeping with the blossoming of sciences and techniques. If this is the case the future seems likely to bring about a diversification of both the qualifications and skills required and a wider range of combinations rather than increasingly comparable qualifications. This does not mean that it is not necessary to find a way of classifying them in a system of categories as it is doubtful whether workers' organizations would readily accept increasingly individual employment contracts and pay. Any attempt to classify and compare qualifications must take account of these trends towards the proliferation of trades and occupations and pinpoint the ways in which they are changing.

Qualifications as a source of tension and a bargaining tool

Qualifications as an investment in human capital and a formal investment

From the point of view of the worker and the enterprise, a qualification represents the acquisition of competence and experience and is a product, i.e. the result of this acquisition. A qualification is therefore an investment. Depending on the case, this investment is financed by the worker, the employer or enterprise or even by the State when skills need to be developed or equal opportunities need to be ensured. This investment in human capital is often the result of the combined efforts of all these people.

Table I Trends in production systems and their strategies

Industrial societies	Service societies
Systems based largely on the mass production of standardized consumer and production goods	Systems based on the production of complex assemblies, production services, personal services, multi-option products, incorporating high levels of intelligence and produced to customers' specifications
Mass production	**Smaller scale production with product and quality diversification in small and medium production runs**
Renewal of products	Management of tastes and aspirations
Price-based competition	**Quality-based competition**
Quest for economies of scale	Quest for economies of range
Large-scale enterprise	**Redevelopment of large enterprise in the form of SMEs and proliferation of SMEs**
Predominance of tangible capital (hardware)	Predominance of intangible capital/ research/patents/ licences (software and "orgware")
Management of production flows	**Management of information flows, human skills and organizational problems**
Electromechanical equipment	Equipment based on microelectronics and cybernetic mechanisms
Specialist, single-purpose machines	**Multi-purpose and reprogrammable machines**
Workshops containing identical machines	Flexible workshops containing a range of machinery
Use of heavy energy and highvoltage current	**Economic use of energy and weak current**
High-temperature production (chemical engineering)	Low temperature production (microchemistry and microbiology)
Importance of transport and handling	**Remote control and operation, automatic transmission**
Inflexible production programmes	Search for flexibility
Retrospective quality control	**On-line control**
Geographical concentration of units	Geographical and transnational distribution, multi-cell and honeycomb development of firms and use of subcontractors

Table II Implications from the point of view of organizations

Predominance of mechanical models	Predominance of organic models
Management of production flows and organization of work	Management of human resources and organization of the enterprise
Hierarchical order and bureaucratic management	**Removal of hierarchy and shortening of command chains - interdependence of levels - development of project groups**
Separation of categories by status (manual workers, employees and managers)	Blurring of status and of design, organization and execution tasks
Technical division of labour and compartmentalization of tasks	**Professional division of labour - development of autonomous groups and task enrichment**
Location predominantly on national territory	Location spread throughout several national territories - development of internal and external communication networks
Divisional structures	**Functional structures**
Formalization of relationships and practices	Flexibility and adaptability sought
Specialization and compartmentalization of knowledge	**Multi-disciplinary nature and combination of knowledge**

A qualification is also what economists call a formal investment (L. Thevenot and M. Maurice, 1986). Over and above the investment made for the purpose of acquiring a qualification or the certificate which attests to its reality, an investment has to be made in society as a whole to ensure the social recognition of this qualification, its name, its content and the framework in which it can be acquired and validated: school, enterprise or any other context.

As a rule, of thumb this formal investment is made up of all the costs which one or a number of economic and social partners incur in establishing a definition. Formal investments, for instance, include all the efforts made to make a trademark or new product visible so that it stands out from the competition through its particular style. The same is true when enterprises attempt to give the category of "manager" separate status from the categories of manual worker and employee.

No qualification receives social recognition without a series of efforts made in advance, concurrently or jointly, by various parties. Any genuine qualification is therefore a social construct imposed by employers as a whole or individually or in contrast by workers, for instance when computer personnel attempted to obtain separate recognition from other trades or occupations.

Over and above these efforts to establish a name, training agencies, future holders of the qualification, representatives of a trade or occupation, and even employers and the State have an interest in the formal or even legal recognition of training schemes and the qualifications to which they lead largely because the official existence of qualifications and classifications makes it possible to contain the many tensions arising from the "envious comparisons" made by well or badly-classified workers.

Efforts and expenditure in the area of qualifications are often economically viable only if these qualifications are socially recognized and validated and if a sufficient rarity value is maintained either by selection in schools and training and apprenticeship agencies or by limiting job recruitment from the professional associations involved, as it is not just employers who decide on the technical and social division of labour (C. Paradeise, 1990).

Qualification in society is therefore the result of a two-tier investment in which the formal investment does not play a negligible role.

Developing occupational skills as a formal investment

In modern societies qualifications (trades and occupations) generally have a title and a definition of the skills and abilities required before someone decides to acquire this or that vocational qualification. The titles and definitions of skills to be acquired, programmes to be followed and study titles to be gained make it possible for workers to pick their way through the maze of training and qualifications especially when these qualifications have a clear-cut position in the scale of trades and occupations recognized in training and job markets.

Qualifications may have to be reclassified and downgraded, however, as a result of economic, scientific and technical developments and changes in organizational models and bargaining systems. Companies as well as workers may therefore find it advantageous to move away from strict comparisons and find a name which gives a new look to a trade or occupation in order to take account of: workers' specific qualities and the implicit know-how with which the experience which they have gained during their careers has provided them, to make the most of the specific training endeavours of a group of workers, to meet needs and requirements specific to one or a number of firms or even to build on the training which they are developing in what might be termed the internal training market.

Table III Consequences for labour organization and workers' qualifications

Importance of labour organization	Importance of project designers
Management of production flows	Management of information flows
Work to specification, under orders	**Autonomy, initiative, responsibility and creativity**
Fragmented specialist work	Horizontally and vertically enriched work
Energy-based work - physical force exerted on materials or objects	**Computer-based work - intellectual work and transmission of information or symbols**
Physical relationship with the product or material	Media relationship with the product or material
Skill, dexterity and speed of execution on a manual level	**Speed of perception, reaction and coordination on an intellectual level**
Separation between thought and action	Combination of thought and action - problem-solving
Heavy work, sometimes dangerous and unhealthy	**Predominance of intellectual work and stress situations**
Mechanical adjustment of people	Adjustment in terms of situational and relationship needs
Management of routine or prescribed situations	**Case by case management without much routine**
Predominance of skilled manual workers	Predominance of qualified workers, technicians, engineers and managers
Fixed working hours and schedules	**Autonomy and flexibility of working hours and schedules**
Comparable skills	Diversified range of workers' skills
Rigid occupational classifications based on skills and experience	**Classifications as a function of ability to assimilate new knowledge and adaptability**
Interchangeability of skills	Heterogeneous skills and idiosyncratic qualities
Pay based on output and productivity	**Pay based on risks and problems to be solved and goals achieved**
Low personal advancement	Personal investment and importance of self-advancement
Sectoral and trade unions	**Professional and enterprise unions**

Labour markets are consequently dependent on the comparisons which workers make as regards their conditions and pay. These comparisons may lead to long-term tensions, on the one hand between the holders of a qualification and, on the other hand, between them and other occupational groups. Internal and external competition, sometimes very lively, develops within a trade as well as between trades. This means that training and qualification provision needs to be redefined and restructured on a periodic or continual basis.

Changes in occupational qualifications and classifications are not just the result of technological and economic changes but also of comparisons between workers and categories of workers in the same way as the attempts which workers' groups make to distinguish/differentiate themselves from a particular occupational title often run counter to the overall solidarity sought by workers' unions.

Managing qualification systems in companies and in society does not therefore merely involve methods of acquiring and validating qualifications. Methods to provide names for, and define the content of, trades or even to change these names and definitions must also be managed, whether or not jointly, in parallel and beforehand.

Depending on the case, provision is made for training and qualification within the enterprise or outside in independent training agencies. Depending on cases and times, this provision is built up with or without and in some cases against union organizations because they refuse to accede to corporate demands.

From the worker's point of view, the improvement of occupational skills provides an opportunity to build and reshape an identity throughout working life. At the same time, the existence and recognition of types of occupational skill are essential for the management of human resources both in enterprise and in society. The productivity and competitiveness of enterprise and the economy depend on these skills and the quality of work.

Nothing is fixed, however, and the provision of training and qualifications has to be continually constructed and reconstructed. This provision has three dimensions, as

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noted by Marc Maurice, because three types of process interact in different ways depending on the countries, sectors and people involved:

- the people and processes involved in shaping social behaviour (schools, enterprise or other training agencies);
- the people and processes involved in organization (people controlling the division of labour which may be technical in Taylor-style organizational models but also professional where, as in the building industry for instance, occupational skills shape organization);
- the people and processes involved in regulating relations between employers and workers, between workers and training agencies and also the State and the public or private authorities which are responsible at various levels for managing qualifications and developing human resources.

Depending on cases and contexts, these people and processes allow or prohibit substitutions and transfers among people and qualifications.

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Steps in constructing statistical comparisons of stocks and flows of certificated vocational skills in the UK and other EC Member States

It is now ten years since the United Kingdom Government expressed anxiety about participation rates of its young people aged 16-18 years in post-compulsory training and education by comparing its own participation rates with those of other European countries. In **A New Training Initiative** published in 1981 it was shown that of all 16 year-olds only 40% remained full-time in education and training after the end of compulsory schooling at 16. The reasons for low staying-on rates into training were in part historical, reaching back as far as the very early beginnings of the Industrial Revolution when many of the now accepted and time-honoured skills of manufacturing had literally to be invented by British manufacturers, producing an ingrained scepticism concerning "paper qualifications". This initial neglect was reinforced by the dominance of the anti-scientific and anti-technical ethos of Britain's ancient universities and hence of the public schools which imprinted the state system with a similar anti-technical and vocational bias.

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Since 1982, public funds to underpin the training of 16-18 year-olds have been made available in Britain on an unprecedented scale. Yet, in the intervening ten years, participation rates of young people in full-time education and training have remained almost stable. There is still no evidence that Britain has 'caught up' with other EC Member States even on the crude measure of participation rates. More detailed comparisons reveal a still-growing deficit in stocks of skill qualifications in the labour force in the UK relative to Europe.

While concern about Britain's skill base and the implications for manufacturing competitiveness have been growing over the last ten years, a team of researchers based at the National Institute of Economic and Social Research and led by Professor S.J. Prais has, since 1978 been engaged upon a programme of investigation into differences in manufacturing productivity between Britain and a number of other industrial countries with the aim of measuring differences in workforce skills and elucidating essential differences in their systems of training and education. These comparisons have provided a series of benchmarks to enable the team to assess the UK efforts to improve the quality and quantity of training and estimate the extent to which the UK may be moving nearer to the European average.

In order to provide a benchmark for the UK and other major European Member States it was necessary to identify measures of skills which were robust and reliable, i.e. had a high degree of comparability for the countries investigated and which could be easily tested for reliability in the countries concerned. A further requirement was that information on the **distribution** of these vocational qualifications among the working population should be reliably collected by government bodies and accessible to the researchers, if not in published form, at least in the form of special tabulations.[1]

For our purposes, the official classification in labour force and census statistics 'skilled' was of no interest since it referred to the classification of work done, not to the training the worker had received. The degree of skill required in the different countries for inclusion in an industrial category 'skilled worker' is extremely variable and has been demonstrated in the comparisons based on matched samples of plants carried out by the National Institute. In a series of studies examining samples of matched plants in metal-working and clothing manufacture in Germany and Britain it was demonstrated that the degree or level of skill required in German plants for the classification 'skilled worker' to be applied was considerably higher than that usually found in the British plants.

We therefore concentrated our attention on skill certification. In each country nationally available vocational certificates attested a variety of levels of skill in relation to a number of recognized occupa-

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tions. A series of investigations was undertaken by the National Institute team in relation to five main occupations (electrical work, mechanical fitter, construction work, office work and retailing) in the UK, France and Germany to discover to what extent the standards of practical skill and the level of technical knowledge required for the award of vocational certification was similar in the three countries. In the first instance, it was decided to concentrate upon the first recognized vocational qualification, known in Britain as 'craft' level, in France as **CAP/BEP** and in Germany as the **Berufsabschluß**.

The National Institute team first needed to elaborate a methodology for investigating the comparability of practical skill and technical knowledge requirements of vocational certification in the countries examined. Briefly, the principal nationally-awarded certificates were identified and copies of recent syllabuses, examination papers and practical tests obtained. The requirements for the award of a vocational certificate at every level for a given occupation in the UK were then compared with the requirements in the other countries studied. In this task the research team was considerably aided by the voluntary assistance of 'technical experts', teachers and lecturers engaged in teaching students studying for these qualifications in schools and colleges together with apprentice-supervisors and employers who had a good understanding of the level of practical skill to be expected of a student or trainee gaining such a certificate. Inevitably, different courses in different countries attached differing degrees of importance to various topics and courses varied in breadth of coverage. In these cases it was particularly important to draw upon the expertise of a panel of experienced teachers and lecturers in each country who would be asked to examine recent papers from the other country concerned in the comparison and to assess the suitability of the topics concerned for their students. Inevitably, the results of such comparisons were not straightforward and required careful assessment in the wider context of the education and training system and its social function.

The topics set to students in an occupation in the countries considered were, of course, never identical, but using the judgement and experience of the research team checked against more expert opinion, equivalences of levels of skill and knowledge attested by the various certificates were arrived at which were found broadly fair and satisfactory by those in each country to whom we submitted our paper. One example of this process may be helpful here.

'The following two examples illustrate the comparability of the CAP and C&G Advanced Craft tests. A question set in 1984 in the French CAP Building Technology test was: 'In relation to a basement room, shown in cross-section on a sketch, what are the steps to be taken to avoid dampness penetrating the walls below ground?' In a C&G Craft level paper the following simpler multiple-choice question appeared: 'The application of asphalt to basements in order to prevent the penetration of water is described as
(a) flaunching,
(b) benching,
(c) tanking,
(d) haunching.
[Mark the appropriate term]'.

In the C&G Advanced Craft examination there appeared a question very similar to that in the French examination (from the paper on Site Procedures, Technology and Practice set in 1984): 'An existing basement room is constructed with one brick thick solid walls and a 150mm thick concrete floor. This basement room is to be made completely waterproof by asphalt tanking. Using sketches where necessary list in sequence the operations involved in carrying out this work'. Another question in the same French paper asks for the causes of peeling of external rendering; a comparable C&G Advanced Craft question asked for the causes of diagonal cracking of mortar joints on an external wall. (Prais and Steedman, 1986).

The results of these detailed comparisons produced no very surprising results concerning standards of vocational qualifications. Our major concern had been to establish whether the standard known in Britain as 'craft', that is, the first level of vocational competence widely recognized by industry and commerce, attested levels of competence and technical knowledge similar to those at this level in other European countries. Once this had been established, it was possible to construct approximate equivalences across the three countries, UK, France and Germany for the principal craft level national qualifications, City and Guilds Part II in Britain, CAP and BEP in France and the *Berufsabschluß* in Germany.

In so doing, we were, of course, aware that, for example, the French BEP requires a higher standard in the formal academic subjects than does the CAP or the corresponding British qualification. Our starting point, was however, to determine how many individuals qualified to craft standard or better (but below technician) other European countries were producing relative to Britain. We did not therefore, need to be too concerned for the purpose of our own project about national qualifications of other countries which seemed to achieve a slightly higher standard than our own – it was sufficient that they could be accepted as at least equivalent. With approximate equivalences at the first level of vocational qualification for the three countries established, we were able to proceed with the construction of three-way tables showing numbers qualifying in a given year and at a given level and occupation in each country (flows). This task was complicated by the need to avoid double-counting of qualifications, the aim being to estimate the number of qualified individuals at a given level, not the number of qualifications awarded. Again, this part of the undertaking was not straightforward. In Britain, vocational awards from a variety of different bodies had to be assessed for comparability and numbers of passes assembled from a variety of sources – in retailing, for example, 300 annual examination passes at 'craft' level in Britain (out of a total of 1 650) were awarded by four different professional bodies all of whom had to be approached separately. In France and Germany the task was considerably lightened by the publication by the National Ministries of Education of national statistics of vocational examination passes. Even more useful for the purpose of understanding how well other European countries were succeeding in increasing numbers with vocational qualifications was the construction of a time series of flows of qualified individuals.

We were able, therefore to show in the summary table published below that not only had British numbers qualifying in key occupational areas hardly increased over the 12-year period despite the introduction of a national Youth Training Scheme, but that other countries had increased the corresponding numbers qualifying and from a higher starting base.

The equivalences established from our comparisons of qualifications were also used to examine and compare stocks of qualifications in the labour force of three European countries using the Labour Force Survey in Britain and its equivalent (*Enquête-Emploi* and *Mikrozensus* in France and Germany respectively).

The programme of work described above and which has resulted in some 20 articles published in the National Institute Economic Review concerning vocational qualifications and their role in explaining productivity differences between Britain, France and Germany was initiated in 1978 at a time when interest in Europe was beginning to focus on the harmonization of vocational qualifications. From the start, the National Institute team followed with interest the work undertaken by CEDEFOP in this area, as manifested by references to

Table 1. Vocational qualifications of the labour force in Britain and France, 1988

	percentage			
	Britain		France	
	1979	1988	1979	1988
No vocational or educational qualifications	46	30	52	37
No vocational qualifications but some educational qualifications	23	34	10	16
No vocational qualifications subtotal	69	64	62	53
Lower intermediate	18	20	27	33
Higher intermediate	5	6	5	7
Intermediate vocational qualifications subtotal	23	26	32	40
Degree or above	8	10	6	7
Total	100	100	100	100

Source: NIESR

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CEDEFOP's work in a number of our articles. A more direct link was established when the present author joined the team at the National Institute having previously carried out a comparative study of vocational qualifications for office work in the UK, France and Germany for CEDEFOP ('Clerical and commercial sector qualifications in the United Kingdom, France and Germany', CEDEFOP, Berlin, 1986). CEDEFOP started from occupational descriptions and then identified the qualifications in each country leading to that occupation. NIESR started from the qualifications themselves – but checked for employment relevance. In sectors studied by both CEDEFOP and the National Institute, eg. construction, vehicle mechanics, the very different starting points of CEDEFOP and NIESR in fact led to very similar conclusions on equivalence of levels of existing vocational qualifications.

Since our studies and those of CEDEFOP were initiated, however, a new body in the UK, the National Council for Vocational Qualifications has been established by the UK Government with the task of 'bringing order' to the existing 'jungle' of qualifications. Almost immediately, the Council created confusion by initially defining four levels of vocational competence whereby the UK definition of a Level III vocational qualification corresponded to the UK qualifications previously defined by CEDEFOP as Level II. The Council then proceeded to invite employer bodies representative of different employment sectors to define levels of vocational competence required for employment at different levels within the industry. The resulting 'employment-led, competence-based' qualifications were criticized by NIESR and subsequently by other bodies including the TUC for embodying low standards of skill relative to other European countries – the NCVQ's Level I qualification has since become known among employers as 'stand up and walk' level) for being narrow and job-specific and for unreliable assessment procedures (workplace assessment by supervisors). In making these criticisms, notably in a note entitled, 'How Europe would see the new British initiative for standardizing vocational qualifications', NIESR, August 1989, the Institute drew upon its practical knowledge of standards attained by individuals in other European countries to counteract the tendency of British employers to seek to embody the existing low skill levels of the British workforce in new vocational qualifications. As a result of this debate, it is now widely accepted in the UK that vocational qualifications, especially for young people should aim for flexibility not job-specific narrowness and should incorporate general education elements. The NCVQ's Level I (Level 0 in the European classification) has been quietly abandoned and the minimum level to be aimed at by trainees is NCVQ Level II (European Level I).

For an individual Member State, such as the United Kingdom with a deficit of broadly attested vocational skills and knowledge in the working population, much has been gained by keeping the leaders in this field in the European Community in mind and by continual reference to European good practice. For the whole Community, however, such introspection will not suffice, if one Member State, Britain, can identify and start to remedy weakness by close study of the example of other European countries of a similar size and industrial structure, the Community as a whole should be taking steps to compare flows and stocks of certificated skills with those of other global groups – SE Asia, the US and Canada. To do this, much painstaking statistical groundwork will be necessary before the situation within the Community is sufficiently well understood. Nevertheless the challenge from other global groups in terms of the development of human resources is an urgent one and the necessary comparative studies should be implemented in hand with equal urgency and speed.

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1 At this point confusion can easily arise if the difference between the English 'qualification' and French 'qualification' is not fully spelt-out. In English usage, 'qualification' denotes certificated skill or knowledge, corresponding to the French '**diplôme professionnel**', the English term 'skills' corresponds to the French '**qualification**'. Neither of the terms 'skilled' or '**qualifié**' denote certificated skills based on formal training.

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Evolution of qualifications

1. While making no claim to precision or scientific substantiation, let alone perfection, this article attempts, in quasi-essayistic style, to present for consideration a number of ideas, some of which are still provisional. It is my intention to depart from well-trodden paths and to take greater account of possible new situations than could be achieved with a highly plausible approach to this subject.

Such an approach cannot be adopted here, although the need for a more comprehensive, systematic, comparative study of "qualifications" and their development on the basis of national monographs should be emphasized. This will undoubtedly be a topic to which considerable importance will again be attached in the new CEDEFOP guidelines for the programmes of work from 1993 to 1996. This being the case, an attempt of this nature may also be a useful means of identifying the most important aspects to be considered by CEDEFOP itself.

2. The term "qualification" is a magic word, the next, and only, higher level being the term "key qualification". It is assumed that the appropriate "qualification" provides the "key" to solving every conceivable problem.

Perceptions of the term "qualification" narrow or widen with the angle from which it is viewed. There are essentially three perceptions:

- the structural, collective or macroeconomic, or macrosocial, perception, the "overall potential" of a country, region, etc.

- the individual or individualistically ascribable or ascribed perception, i.e. "individual potential", "human resources" or "capacity for work", "capacity to consume", etc.

- the institutional perception which is defined by certain education or labour-market authorities and is associated with certain entitlements or direct material utility and finds expression, for example, in "certification" or "grading" in the firm.

The last of these categories ought really to be further split into two perceptions, one relating to training, the other to the labour market, i.e. the firm or user of the qualification.

From what has been said, it is clear that we are at a highly complex interface, which would be difficult to describe in one word. The following two diagrams will help to explain this.

3. From this it is clear that the term "qualification" cannot be ascribed to just one scientific discipline:

It must be considered from the angle both of individual and social psychology and of the theory of education or the science of teaching.

Given the subject matter of concern to us, vocational training and its development, two aspects are of particular interest, and we will look at them more closely: on the one hand, the economic and macrosocial aspect in the context of the demand for qualifications and their utilization; on the other hand, the educational, i.e. generation or teaching, aspect, in the context of the supply structure of appropriate institutions.

This raises the question whether and to what extent present institutions on both the demand and the supply side are capable of learning to "master structural change", which is accelerating because of European integration and other factors.

4. New structural requirements to be satisfied by qualifications" are not only emerging from European integration and the economic environment. The social, cultural and ecological conditions underlying the generation and utilization of qualifications are also changing fundamentally. The developments that have been occurring for several years and are now accelerating cannot be adequately described, let alone unequivocally assessed in terms of scale or implications.

Economic, ecological, social and cultural change or structural change can be described as follows:

- a wide variety and abundance of products on the one hand, scarcity or excessive control on the other;

- increasing destruction of natural resources and the environment, disturbance of the relationship between man and nature, excessive control of the circular-flow economy and waste disposal problems;

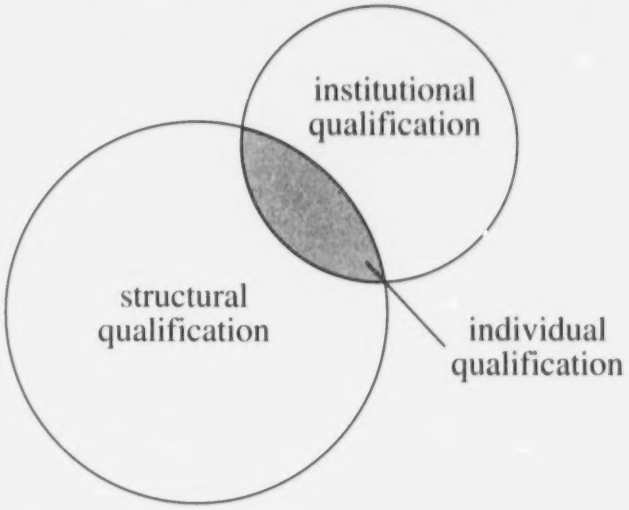
- social communities, forms of reproduction and links are being questioned, threatened or destroyed by mobility, deregulation, the privations of refugees and/or excessive individualization tendencies;

- cultural "truths", schools of thought and value systems are moving into a state of flux, causing uncertainty, etc.

5. However, this menacing scenario can and should also be seen as an opportunity.

Burkart Sellin
CEDEFOP project leader «Comparability of vocational training qualifications»

Figure 1: The relationship between structural/ institutional and individual qualification



■ New benchmarks are urgently needed particularly at times of structural change, and if they are not possible, regression to obsolete value systems or "fundamentalisms" occurs.

■ Change is movement, and without movement there is no progress and no control of change, only adjustment to a seemingly unalterable trend. The nature and scale of movement, however, need to be analysed in greater detail and more conscientiously.

■ The focus of attention is turning to the interdependence of economy and ecology, of culture and society, of man and nature.

■ The recollection of soft technologies, work and life close to and compatible with nature, and conscious consumption call for more holistic analyses and new scientific approaches.

■ Where the change in qualification requirements is concerned, this means that macrosocial or structural, institutional and individual aspects of qualifications should be considered simultaneously. Structures and institutions must leave individual aptitudes and inclinations room **both** to adjust to change **and** to play a creative part in guiding change.

6. Conclusion: for neither "adjustment" to nor the control or "guidance" of change is the need for appropriate courses and opportunities for the development of qualifications as a "human resource" currently being adequately satisfied quantitatively or qualitatively. In plain language, there is not enough training at any level. Despite structural needs, there is at present no adequate institutional response.

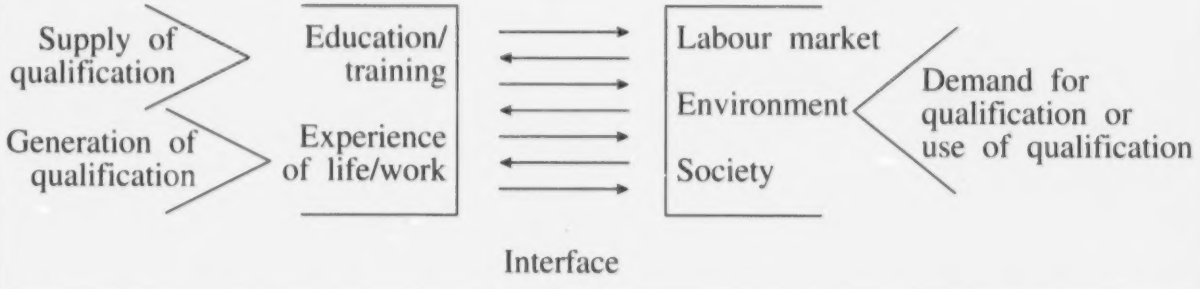
7. Qualifications as a "human resource": The term "human resource", though better than the "human capital" of the 1960s at least, is still technocratic. It excludes individual inclinations and focuses on the primarily economic aspect of utilization. Social, cultural and ecological aspects too are largely ignored.

Education experts, teachers and psychologists, including the trainers who teach "techniques", are, however, bound to take these inclinations into account even if their primary concern is to improve the economic utility of the qualifications of their pupils, trainees or students.

However, economic and financial policy is now too dominant a force in education and vocational training policy. To convince the former, the latter may therefore have to borrow concepts from it: "human resources". Despite all the difficulties of finding an unambiguous definition, I find the term "qualification" not only preferable but also better suited to an analysis of the inconsistencies.

In discussing the "evolution of qualifications", the subject of this edition of the Bulletin, the authors are thus called upon to disclose their respective definitions of "qualification", since the differences stem less from specific national peculiarities or terminology than from the scientific theory or approach adopted, each possibly having its own structural or institutional features.

Figure 2: Qualification and "interface"



Training and the labour market: the use of data for decision-making

Report on the colloquium in Nancy in march 1991 organized by GREE, EEC and CEDEFOP

Over the past few years, in most countries in the European Community there have been many researchers tackling the question of the links between initial training and work, and it seemed that the time was now ripe to take a look at analytical methodologies and their use by decision–makers. This was the subject of the colloquium attended by forty people representing European Community agencies and national ministries, together with experts from statistical departments and research workers.

Introduction

The debate was planned on several levels. There was a review of what already exists: observation resources, methods, indicators and results. The discussion bore on each party's information needs. New approaches were proposed that were suited to existing sources but could take account of current changes (the rapprochement between schools and employers, the greater complexity of the process of integration in the working world) and various aspects of the problem (quantitative and qualitative, short– and long-term, etc.), while being generally applicable where possible. The aim was also to clarify the concept of integration at work and the respective roles of those involved: employers, young people, the institutions. The questions tackled were at one and the same time theoretical, methodological and political.

This article summarizes the preparatory work[1] for the colloquium and the discussions there. Like the event, this article is structured around the parties involved in the training-employment relationship.

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The employers' approach

The data available and the use of data

The existing sources of information are sufficient for significant results to be determined and the essential questions to be asked, despite their diversity – which F. Pottier attributed to societal differences in training and employment systems.

Today we are familiar with developments in the process of integration in working life: how long it takes, the selection process, the relative standing of young people, recruitment channels, mobility, etc. The same is true of the variables on which that integration depends: differences among employers in terms of size and economic sector, the vital influence of policies on human resource management (as in the case of the UK, described by P. Demery). It was thought appropriate to combine – and therefore to harmonize – the sources (individual particulars, administrative or statistical surveys on employers and trade bodies, sector– or employer–specific monographs, forecasting models) and to conduct regular in-depth investigations.

The theoretical issues

A preliminary problem is to determine what the parties involved in integration actually do. We looked at the respective roles of each party: employers and employers' organizations, the hierarchy, the unions, employees, the local environment, etc. in which integration-linked fields do they intervene: mobility, recruitment, promotion, management of skills and training? Do employers' attitudes amount to an actual "policy" or "strategy", or are they just built up through a series of *ad hoc* decisions and reactions to the constraints? There were many questions pertaining to the nature of the workplace itself: its new role in training, the evolution of cultural models, etc.

The second problem was to consider "employers' needs". This concept was referred to constantly in the general discussions on integration ("schools must adapt to the needs of the economy"), but it was sharply contested by the research workers, who questioned the nature of such needs. As is logical, in statistical approaches it is the quantitative needs that are stressed, but in practice the figures conceal a wide diversity of qualitative needs. Short-term, sometime pressing, needs should not be confused with long-term needs, which are more flexible but often little known because of the lack of management forecasting within firms. The needs at the time of recruitment are not necessarily the same as the needs during the tenure of the job, since the former are based on the logic of the market and the latter on the technical and social organization of work. Several contributors stressed the difficulty of grasping these needs. V. Cappecchi stressed the vital influence

of the current economic situation on forecasts and the value of a concerted regional approach. J. Rose reminded the colloquium that employers are "rarely capably of precisely defining their needs or translating their job 'needs' into training requirements". He also spoke about the existence of "considerable margins for manoeuvre" as regards "technical and economic demands", as well as the inevitable time and function gap between the school and the workplace.

Young people's approach

Analysis of integration into work

In most countries, the conditions that regulate the integration of young people into the working world are well known. The factors most commonly used to describe their integration are as follows: the nature of their first jobs (skills, temporary status, the sector in which the employer operates, its size), the time taken to find the first job, job-seeking methods, the probability of recruitment and stable employment, the list of jobs held since leaving school, the total time and number of periods of employment or unemployment, the match between specialist training and employment. A distinction could be made between three types of explanatory variables: personal (sex, age, occupation, social origin, parents' occupational status, major events, attitudes), the school (diploma, specialist studies, counselling, career itinerary) and spatial (local labour market). Taking these distinctions as the starting point, J. Planas suggested a structure of more complex variables such as the "social context", "structural components of itineraries", "vital components", and "attitudes to integration, aptitudes and integration strategies".

All these tools helped to identify the trends predominating in many countries: delayed or temporary integration; a transition marked by a succession of different kinds of periods; marked differentiation and the risk of marginalization; and separate strategies depending on sex and social origin.

Problems of method and content

Concerning the period of observation, each participant talked about the value of regular surveys on young people's integration and their subsequent careers; nevertheless, the preference was for longitudinal surveys based on a quarterly calender, since integration is a time-based process. The field and target group for surveys raised unsolved questions: what generation, or school-leaving level? School-leavers or recent diploma holders? The national or local level? Interviews, postal questionnaires or telephone panels?

The choice of variables was also a tricky one. Rather than simple variables such as the level of training and specializm it would no doubt be better to use "multidimensional variables" to focus more sharply on interactions and the complexity of the routes taken. Furthermore, the acquisition of qualitative information is difficult but vital: they include integration mechanisms and the practices of the parties involved. Finally, the concepts in individual countries should be harmonized, and fluid situations should be pinpointed by "clear-cut" variables, improving the ways in which data are used, especially longitudinal data.

The theoretical problems

The concept of integration itself was questioned, as it was regarded as too simple and too individualistic, too instantaneous and too much based on the idea that training can be directly geared to jobs. Integration today is considered to be an itinerary, not a sudden switch from one status to another. It was described as a process, a transition, one that is socially structured and a factor in differentiations among youth groups, one of the forms of mobility. U. Grünewald distinguished between two forms of transition (from general education to vocational training, and then to working life), the course of which varies from country to country. All this is the reason for certain methodological options: the longitudinal approach, joint analysis of all forms of mobility, the taking of other parties' strategies into account, etc.

The approach by institutions

The role of institutions in integration is the subject of less research than that of other parties and yet it is crucial, for it can be assumed that "the way in which decisions are taken within institutions affects the conditions for integration" (J. Rose).

The role of institutions

This concept first of all covers training establishments. As regards integration, there should be information on the organization of routes (hierarchy, bridges) and the acquisition of training (duration and intensity, level and content, place and methods, diplomas).

Then there are the institutions responsible for youth guidance and screening. In some countries, such as France, these functions are performed independently. It would be of interest to investigate the influence of career guidance departments on the training itinerary and people's choices, their decision-making criteria and their effects on integration. A third group of institutions performs the functions of forecasting and planning. With the various parties involved, they tackle both forward planning and evaluation missions.

An analysis of national trends and specific features would be useful in this respect: "a growing penetration of institutions and their functions", "closer links between training and production systems", "the decentralization of decision-making", etc.

The Issues

These institutions do not all have the same information needs. A distinction was made between four levels: the instantaneous "supervision" of young people's position on the labour market, the "analysis" of the impact of measures, "forecasting" developments in the process of integration and relations between the qualifications acquired and positions on the labour market, and " the search" for new channels. W. Dickoff pointed out the differences in information needs depending on how the information was to be used (information for pupils or for planning), the developments regarding those needs and the differences between geographical levels. B. Bovin stressed the problems of "understanding the decision-making process", (determining priorities, implementation, evaluation and possible conflicts) and the need to improve communication between data producers and users:

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"simple, clear presentation", the highlighting of "new trends and unexpected findings", the usefulness of an "evaluation of evaluations". Finally, F. Pottier pointed out that "there is no one ideal survey but rather surveys or statistical measures set up to respond to a question raised by a given interlocutor". Two major theoretical problems rose here. The first was the concept of evaluating policies. Today this is recognized as essential, but it is still fluid and calls for thought as to the practice of evaluation itself, the challenges it creates, its referents, and the tools it uses for measuring. (In this respect, we might well question the usefulness of integration surveys as an indicator for the effectiveness of policies.) The second problem was that of planning. C. Sauvageot described the development of practices in this field and the switch from a quantitative method to more complex approaches.

Relations between training and employment

The dynamics of the parties involved

During the colloquium there was a good deal of discussion on ways of improving the gathering of information: by precisely defining the objectives and questions, by evaluating the tools and by a constant dialogue at different levels, the themes to be tackled and useless data. In addition, each party involved in all its complexity should be understood. Young people, for instance, should be seen as individuals, as a set of categories and as a single social group. In the same way, the "employer party" may be differ widely from one sector to another and there may be complex relations among the social partners. We should also describe the relations among the parties: levels (local, regional, national), nature (commercial, contractual, negotiating), and the effects on decision-making, data-gathering and planning.

The challenges of the relationship between training and employment

The main theoretical problem is the challenge to the "geared" approach. If integration is seen as a lengthy complex process, we can no longer expect the instantaneous, fine-tuning of training to employment. This is the viewpoint held by many people today. The gearing of training to employment is in fact open to criticism on technical grounds (the problems of nomenclature and hypotheses) and as to its merits: a critique of the concept of needs, the inevitable gap between the education system and the working world. We need to define an alternative that allows for the complexity of the relationship between training and employment but still serves as an aid in decision-making.

We could also question the nature of the work and employment relationship, starting with the problem of integration, thus joining in the current debate among work economists. Does the market help to restore mobility, especially among young people? Are there individual markets for young people? Is the recruitment of manpower governed by market laws or socio-institutional rules?

The combination and confrontation of tools

There was a good deal of discussion about the fruitful combination of tools (opinion surveys and analyses of practices, qualitative models and data, monographs and wide-scale surveys, etc.) and the places of observation: young people, workplaces, institutions, etc. With this in mind, W. Dickoff suggested making a distinction between four blocs of data – general education, vocational training, transition route, work – in order to understand "the status on the labour market to which the different types and levels of education lead, and how vulnerable are the various educational groups on the labour market".

Finally, there was discussion as to the problem of international comparisons. J. Planas expressed interesting views in this respect. "Inter-country comparisons are not very useful on the formal level but, on the other hand, they may be extremely useful if one constructs complex qualitative indicators that each country 'fulfils' in a distinctive manner depending on its special features." This would imply that it is better to harmonize definitions and indicators, tools or theoretical objectives. For his part, U. Grünewald proposed various criteria for comparing vocational training systems: degrees of decentralization, the participation of the social partners, apprenticeship in the workplace and dependence on market rules. Finally, there was debate as to the interpretation of the differences among countries, with a distinction being made between general trends and inevitable societal logic.

Conclusion

Now that the colloquium is over, certain interim conclusions are discernible in the form of "accepted findings", "tracks" and questions.

The main findings are of a methodological nature, relating to the nature of surveys (their regularity, the need for longitudinal surveys, joint surveys on the various parties concerned), the variables (combina-

tion of variables, the choice of complex indicators, allowing for institutional logic), the approach (the value of an ongoing dialogue between statisticians and research workers, the need to obtain a clear definition of their objectives from the people requesting information).

Among the tracks regarded as fruitful, some people aimed at a better analysis of the problem: unemployment should be described in terms not only of the rate of unemployment but also by its duration and recurrence; qualifications should be analysed in terms of job profiles; initial and continuing training should be linked; young people's attitudes should be taken into account; there should be more interest in the question of costs; tools should be found that help young people to understand changes; the problem of counselling should be taken into consideration. The aim with other tracks was to enrich the relations among decision-makers (the nature and place of the dialogue, the questions to be discussed, the method of using information) or giving incentives for using international comparisons: points of confrontation, methods of harmonization, the interpretation of differences.

Finally, there were still questions that merited further thought. Some were on the production and use of data. What priorities should be set? How can the resources and places for expressing information needs be found? How can socio-economic variables be incorporated in the analysis of integration? What new planning practices should be set up? What should the procedures be for evaluating policies and the effectiveness of statistical tools? The second set of questions was more theoretical, relating to integration and its place in the system of mobility as a whole, relations among the parties concerned, the employer category, the concept of the labour market and employment, and the position of young people on the labour market, the heterogeneity of youth, etc.

This review confirmed the wide scope of the work that has already been done on the use of data for decision-making as regards the relationships between training and the labour market, the value of the synthesis produced during this colloquium and the need to continue with the debate over the years to come.

Gamma / Tatiner

[1] A working group had met previously and each of its members had been asked to write a paper. As a result, this article draws on the papers contributed by B. Bovin (Denmark), R. Breen (Ireland), V. Cappecchi (Italy), P. Demery (Great Britain), W. Dickoff (Netherlands), U. Grünewald (Germany), J. Planas (Spain), J. Rose and Cl. Sauvageot (France) and contributions to the debate by all participants. It also owes a good deal to K. Mejer (EC-Petra), G. Dupont and F. Reis (CEDEFOP) who, together with the author, were responsible for coordinating the colloquium.

By:
CEDEFOP
European Communities
International Organization
Maryse Peschel
Documentation, CEDEFOP

Bibliographical references

Interim report on the implementation of Council Decision 85/368 EEC of 16 July 1985 on the comparability of vocational training qualifications between the Member States of the European Community
Commission of the European Communities,
Luxembourg: Office for Official Publications of the European Communities, 1990, 9 pp. + annex - COM(90) 225 final
DA, DE, EN, ES, FR, GR, IT, NL, PT
ISBN 92-77-61350-5

This interim report is a simple description of the special features of the system, the work done and difficulties encountered, the measures adopted at Community level for completion of the work by the end of 1992 and the measures planned at national level for using the work. The annex contains a list of the occupations for which the comparability of qualifications has been established.

Information dossier on Community work on occupational qualifications
European Centre for the Development of Vocational Training (CEDEFOP).
Berlin, CEDEFOP, unpublished, 1991, 26 pp. + annexes
DA, DE, EN, ES, FR, GR, IT, NL, PT

This information dossier first describes the status of the Community's work on the recognition of diplomas, titles and certificates of education and vocational training on the one hand, and the Commission's activities on the other. It then offers a brief review of CEDEFOP's work on the equivalence of job qualifications and profiles. The final part describes the transnational project, "Euroqualification", on which 13 organizations from Member States are represented. The annexes contain project data sheets from CEDEFOP's 1991 programme of work on the subject, together with a bibliography.

Répertoire européen des profils professionnels: essai d'approches méthodologiques (European directory of job profiles: an attempt at methodological approaches) (provisional document)
European Centre for the Development of Vocational Training (CEDEFOP)
Berlin, CEDEFOP, unpublished, 1990, 138 pp.
FR

This document outlines the results of work done under the experimental project relating to a European directory of job profiles developed by CEDEFOP in consultation with representatives of leading national agencies for research on job profiles. It makes proposals as to objectives, the methodology and organization of the European directory, citing three examples from the fields of engineering/metal working, the circulation of information and general administration and financial services.

Drexel, I.; Fischer, J.
The enterprise and its role in the production of qualifications: constitution and development of medium-level qualifications in Germany and France - a comparison.
European Centre for the Development of Vocational Training (CEDEFOP)
Luxembourg: Office for Official Publications of the European Communities, 1990, 45 pp.
DE, EN, FR
ISBN 92-826-1705-X

This is a report on a conference held in Berlin on 29 and 30 March 1990. The meeting was part of a research project funded by the German Federal Ministry of Education and Science, entitled "New ways of access to intermediate occupations in industry in Germany and France. The premises for new streams of recruitment and training. The effects on initial and continuing training systems". This report reviews the main project findings and suggests a comparison between France and Germany as regards the creation of qualifications, personnel policy etc.

Paracone C.; Schiavone N.; Uberto F.
Description of a framework of macroprofiles (archetypes)
European Centre for the Development of Vocational Training (CEDEFOP)
Luxembourg: Office for Official Publications of the European Communities, 1990, 137 pp.
EN
ISBN 92-826-2527-3

The study examines the structure and dimension of office work and compares it with factory work on the basis of a grid which divides labour into two basic families - manual and intellectual work - and into three stages: planning, performance and supervision. It concludes that it is impossible to separate any of these families or stages completely from one another. New technology is tending to interlink the various components, and there is a trend towards increased integration between planning, performance and supervision. Within this scenario there is a major role for training as a continuing, on-going process. Further chapters look at the relation between technology and the organisation and structure of job skills; the content of new job skills and their implication for training and labour relations. Finally, a series of archetypal occupational profiles is provided, describing job content aims and responsibilities which could be adapted to the functions in services or in industry.

L'école et l'industrie, 1991, 47 pp.
Skill shortages in Europe, 1991, 42 pp.
DE, EN, FR
Opinion of the Industrial Research and Development Advisory Committee of the Commission of the EC (IRDAC), Brussels, "Task Force: Human Resources, Education, Training, Youth", Commission of the EC.

In 1989 the Industrial Research and Development Advisory Committee of the Commission of the European Communities (IRDAC) set up a working party (WP 11) whose terms of reference were to analyze problems of education and training for industry, in particular those relating to industrial competitiveness within the European Community. In 1990, the working party set up two sub-committees, one to study the relations between school and industry and the other to consider the shortage of skilled manpower. These two reports present the findings of the research by these committees and IRDAC's recommendations.

Nyhan B.
Developing people's ability to learn a European perspective on self-learning competency and technological change Task Force: Human Resources, Education, Training, Youth
EUROTECNET
Technical Assistance Office
Brussels. European Inter-university Press, 1991, 193 pp.
EN
ISBN 90-5201-022-

New technology has revolutionised the way business is carried out, the structure of organizations, and the profile of the new European workforce - "the knowledge workers". A modern technological worker is a self-managing person who possesses, what can be termed, a "self-learning competency". As learning is increasingly being seen by the successful companies as a major weapon, the new enterprise will be a self-learning organization. This book contains the results of a European-wide study, carried out within the framework of EUROTECNET, on innovative approaches to self-learning. It presents a series of insights on a critical issue by:

- examining ways in which European education and training systems can play a role in fostering a highly competent and lifelong learning workforce, and
- outlining strategies which can be used by the management of enterprises to bring about the reality of self-learning organizations, which in turn can contribute to a European Self-Learning Community coming into being.

Clift-Minot, E.; Closier, G. (RACINE)
Ouwens, E.; Westerhuis, A. (CIBB)
Instrument for the monitoring of changes in occupational profiles
RACINE (Réseau d'Appui et de Capitalisation des Innovations Européennes)
CIBB (Centre d'innovation de l'enseignement professionel pour la vie économique)
Brussels: EUROTECNET, 1990, 135 pp.
EN, FR, NL
ISBN 90-6549-075-2

This guide, produced by a French and a Dutch organization under the auspices of the European programme, EUROTECNET, suggests a methodology for the analysis of developments in occupations and for translating that analysis into training programmes that can be transferred to the transnational level.
It is broken down into six stages: guidance, provisional description of the work, confirmation with employers, forecasting study, operational description of the work, legitimization.

Johnson R.
Towards 1992 - Vocational qualifications in the Member States of the European Community and moves towards an open market National Council for Vocational Qualifications (NCVQ)
London. NCVQ, 1989, 88 p. / NCVQ, 222 Euston Rd, UK-London NW1
EN

This study which examines the vocational qualification systems in each of the Member States clearly shows twelve distinct forms of provision and considerable variety in what takes place within each Member State. The author feels that this divergence is influenced by the different historical development, types of government, roles of regions and languages in each country. He, therefore, gives a broad outline of the education and training systems in the twelve, before the two main sections which describe the vocational qualification of:
a) skilled workers and mastercraftsmen and,
b) those at technician and professional levels.
The report also traces the history of initiatives and legislation in the EC and its related organizations, with respect to qualifications, training and employability. It concludes with some current developments.

European employment survey

The European Employment Survey was set up by EC Council Resolution C 328/1 of 30 December 1989. NEC (the Network of Employment Coordinators), **SYSDEM** (European System of Documentation on Employment) and **MISEP** (Mutual Information System on Employment Policies) are the core of the European Employment Survey.

Mr. P. Sigonis / DG V - Directorate-General for Employment, Industrial Relations and Social Affairs, EC
200 rue de la Loi; B-1049 Brussels
Unité de M. J.W. Morley

NEC (Network of Employment Coordinators)
NEC is a network of national officials set up pursuant to the Council Resolution on the European Employment Survey.
This network's main objective is to provide reports on two or three subjects a year related to employment, the labour market and employment policies, more particularly in sectors affected by the creation of the Single European Market.
The themes chosen for 1990 were:

- changes in employment in industrial sectors sensitive to the introduction of the single market;
- job shortages in building and information technology trades.

For further information contact:

John Penny
ECOTEC Research and Consulting Ltd
25 Square de Meeûs
B - 1040 Brussels
Tel. (32 2) 511 20 58
Fax (32 2) 511 25 22

SYSDEM (European System of Documentation on Employment)
This system was launched in 1989 by the European Commission, DGV, for an indefinite period. Its main objective is to gather the information available in Europe on employment matters and to provide an evaluation and analysis service for the Commission. The main beneficiaries of SYSDEM are:

- Community institutions,
- public authorities in Member States,
- universities and research centres,
- the social partners.

A network of correspondents in each Member State has been set up in order to provide particulars of the employment situation in EC countries.

The information is disseminated by the SYSDEM Bulletin (4 issues a year), and reports and information on employment. ECOTEC's information service administers a documentation centre where documents can be consulted as well as a bibliographical data bank for which the information is supplied by the national correspondents.

SYSDEM has developed two special departments headed by Mr. P. Sigonis:

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Vakgrope Rijkuniversiteit
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Prof. Eduardo Grilo, Candida Soares
Lisbon

United Kingdom
Kenneth Walsh
Ecotec Research and Consulting Ltd
Birmingham

MISEP (Mutual Information System on Employment Policies)
This system was established in 1982 to meet the need for the pooling of information on employment policies within the European Community. The quarterly bulletin, InfoMISEP (DE, EN, FR), describes the measures, policies and actions adopted by Member States with a view to promoting and improving employment in the European Community. The information comes mainly from national correspondents and is used to update the Basic Information Reports.

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Lily Apostolakis
Ministry of Labour

Spain
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Ministerio de Trabajo y Seguridad Social

France
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Jean Hoffman
Administration de l'Emploi

Netherlands
Chris Smolders
Arbeidsvoorzieningsorganisatie

Portugal
Victor Viegas
Ministério do Emprego e da Segurança Social

United Kingdom
Jeanie Cruickshank
Department of Employment

EUROQUALIFICATION: an example of a transnational project

Euroqualification is a joint project involving 13 national agencies in Member States, the aim being to pursue and develop their transnational exchanges at Community level. In 14 occupational fields, a group of experts is to formulate measures and the content of new forms of training so that experiments can be conducted on complementary modules, compatible with existing measures, in about fifty trades.

These new modules will include language training and preparations for a visit abroad. The programme is to be developed over a period of four years.

Euroqualification
M. Thobois
7, bd de l'Empereur; B-1000 Brussels
Tel. (0032 2) 51 02 01

B

By:

FOREM – L'Office communautaire et régional de la formation professionnelle et de l'emploi

VDAB – Vlaamse Dienst voor Arbeidsbemiddeling en Beroepsopleiding

CIDOC – Centre intercommunautaire de documentation pour la formation professionnelle

ICODOC – Intercommunautair documentatiecentrum voor beroepsopleiding

Boulevard de l'Empereur 11, B – 1000 Bruxelles. Tel. 02 513 93 20 – Ext. 1001

Bibliographical references

Delbosse, A.
Faculté ouverte pour enseignants, éducateurs et formateurs d'adultes (FOPA) Université Catholique de Louvain (UCL)
La formation en entreprise industrielle et sa contribution a la compétitivité (Training in the industrial enterprise and its contribution towards competitiveness)
Louvain-La-Neuve, FOPA, 1990, 163 pp. + bibliography
FOPA, Grand-Rue, 54,
B-1348 Louvain-La-Neuve

In this university publication, the author analyses the variables that intermediate between competitiveness and training in the workplace such as marketing, production and human resource management. When enhanced by targeted training schemes, these variables have measurable effects on the competitiveness of an enterprise.
Following a survey on a sample of employers, the author has produced a series of grids designed to identify the specific and general skills and new patterns of behaviour generated by training schemes. He suggests new approaches to integrated in-company training which would improve the company's economic effectiveness and workforce skills.

Personnel Guide of De Standaard, Het Nieuwsblad and De Gentenaar (Vlaamse Uitgevers Maatschappij, VUM)
Beroepen belichten - wegwijs in nieuwe banen
Brussels, VUM, 1990, 198 pp.
VUM, Gossetlaan 30,
B-1702 Groot Bijgaarden

The series of articles appearing under the title "Beroepen Belichten" ("Spotlight on Jobs") in the Flemish newspapers De Standaard, Het Nieuwsblad and De Gentenaar is intended to throw light on the day-to-day realities behind the various job titles which appear in job advertisements and are used within firms. To this end various holders of each type of job are interviewed. This weekly column is followed with interest both by young people at the start of a career and by relevant staff in industry and education. This book brings together articles on 33 occupations to provide information for those seeking a job and wishing to build a career.

Van de Poele L.; Heene J.
Ghent State University (RUG) - Seminarie en Laboratorium voor Didactiek
Ministry of Education - Council for Technical and Vocational Secondary Education
Veranderende Beroepsprofielen ten gevolge van technologische innovaties in de financiele sector. Een methodologische studie.
Ghent, RUG - Seminarie en Laboratorium voor Didactiek, 1988, 136 pp. (2 vols. + volume appendices; various pagination)
RUG - Seminarie en Laboratorium voor Didactiek, Henri Dunantlaan 2, B-9000 Ghent

At the request of the Council for Technical and Vocational Secondary Education an inter-university research project was established under the name "Profile Project" with a view to developing a method which, allowing for the specific features of particular sectors and jobs, would allow occupations to be analysed in such a way as to bring out all aspects relevant to education. This report outlines the research done with a view to compiling job and skill profiles for counter clerks in the financial sector and sets out the results obtained.

Research in progress

Courseware development aimed at remedying mismatches between occupational requirements and training outcomes in the various forms of education.

RUG - Seniarie en Laboratorium voor Didactiek,
Henri Dunantlaan 2, B-9000 Ghent

Objectives
The work centres on the construction of a computer-aided instrument for the purpose of evaluating the skills and personal characteristics of (future) workers in relation to their functioning in firms and other organizations and diagnosing the types of training needed. The diagnostic process is intended to measure general suitability on the one hand and to analyse the individual's current working situation on the other. The latter may give indications as to what has still to be learned at company level.

The results of the study will be issued at the end of 1991.

Institutions concerned

Ministry of Education
Council for Technical and Vocational Secondary Education
Mr Fons Verschaeren, secretary,
Koningstraat 172/bus 2,
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Tel.: 02 - 219 41 67.
Fax: 02 - 219 34 25.

The Council, which advises on technical and vocational secondary education, is made up of representatives of the world of education, employers' organizations and trade unions. With a view to the preparation of its recommendations it establishes sectoral committees, also of tripartite composition, to compile reports on occupational profiles, new courses of study, etc. in their own sector.

Centre d'information du point d'appui TEF (Travail - Emploi Formation), rue de Bruxelles 39, B-1400 Nivelles, Tel. 067/2179 51
Steunpunt W.A.V. (Werkgelegenheid - Arbeid - Vorming),
Van Evenstraat 2 B,
lokaal B, B-3000 Leuven,
Tel. 016/28 32 39.

These two research centres serving the two language communities have been set up by the Services de Programmation de la Politique Scientifique (SPPS). They are intended to serve as observatories for the labour market and include in their terms of reference the task of describing developments and trends in vocational skills; they publish a newsletter reporting on those developments.

DK

By:
SEL
STATENS ERHVERVSPÆDAGOGISKE LÆRERUDDANNELSE
Rigensgade 13
DK–1316 København K
Tel. 01 14 41 14

Bibliographical references

Analysis of qualification requirements and continuing training requirements in Danish convenience goods stores and special (non-food) stores in the years 1990-95.
Drawn up for the Commercial and Clerical Trades Continuing Training Committee and the AMU-Directorate by the Kai Svendsen Management Consultancy. Copenhagen: Arbejdsmarkedsuddannelserne, 1989. 46 pp.
This report was commissioned by the HKU (Commercial and Clerical Trades Continuing Training Committee), which wants course development to be based to a greater degree upon studies of development trends and future qualification requirements, as a feature of its training policy. The analysis contains three sections, namely: clarification and priority-ranking of key development trends for the retail trade; identification and description of those subject areas which should be included in a coherent continuing training system, and how the system can be structured in modules.

Houmann Sørensen, J.
Renewal of vocational training in Denmark.
The Danish contribution to PETRA research strand, Theme 1: "National responses to changing needs for vocational skills". Høje Tåstrup: Danish Technological Institute, 1990, 83 pp.

This report analyzes how the needs for new qualifications are determined within the various trades and industries in Denmark, who are the key people in this process, what the mechanisms are which bring about the "translation" of new qualification requirements into actual planning of training and teaching in Danish vocational schools, and the relatively dynamic results of the specific Danish system. The analysis of the renewal process falls into two parts, namely a general description of the system (Chaps. 1-5) and an actual review of a number of examples of setting up the renewal process, elucidated with case studies. The report gives a very valuable insight into the most important changes which the vocational training reform of 1990 is bringing about.

Clematide, B.
Qualification studies and development of labour market training schemes.
Tåstrup: Dansk Teknologisk Institut, 1990. 40 pp.

In this report, the current position of qualification research in Denmark is reviewed with regard to subject matter. Qualification studies carried out at DTI are used extensively as a basis. The qualification requirements described here are requirements derived from trade and industry itself. It is argued that this starting-point is too narrow in the planning of training policy, and the report gives a number of theoretical and practical indications as to how translation from qualification requirements to training objectives and development of new methods of teaching can take place.

Qualification -
For what? For whom?
edited by Palle Rasmussen. Aalborg: Aalborg Universitetsforlag, 1990, 190 pp.

In this research yearbook a critical account and discussion are presented, in 7 articles, of the qualification question and the initiatives for strengthening training schemes and improving the qualifications of the Danish workforce. The more fundamental problems of qualification and of training policy are too narrowly conceived, rating qualification needs below technological development, training policy below vocational and labour-market policy, separating vocational competence from general competence, and skills training from public and individual instruction, and leaving to market forces the allocation of training opportunities.

Ongoing research

The OVE-project (public and in-firm continuing training).

The purpose of this project is to elucidate the interplay of training, recruitment and qualification requirements at the workplaces, with subject matter and forms of instruction within the AMU-system, semi-skilled training and continuing training of skilled workers. In the pilot stage, field studies have provisionally been carried out, in both firms and schools, within the land transport and wholesaling sector and in the processing industry. The project is being carried out by DTI (Danish Technological Institute) in collaboration with SEL. The project is being financed in the pilot stage by the Ministry of Labour, DTI and SEL. In the next stage, the OVE-project will be financed by the Ministry of Labour and the trade committees. The project will end in 1993.

Useful addresses

Dansk Teknologisk Institut (DTI),
Afd. Arbejdsliv Gregersensvej
DK-Tåstrup, Tel.: 42 99 66 11
DTI/Arbejdsliv (DTI/Trade and Industry) works with research and development projects within new technology, workplace organization and development of new qualifications.

Roskilde Universitetscenter (RUC)
Hus 061, Postbox 260
DK-4000 Roskilde, Tel.: 46 75 77 11
RUC is engaged in research, development and teaching within the fields of technological development, qualifications and vocational and labour-market pedagogics.

Statens Erhvervspædagogiske Læreruddannelse (SEL)
Rigensgade 13, DK-1316 Copenhagen K, Tel.: 33 14 41 14
SEL (The Royal Danish School of Educational Studies for Teachers at Technical and Commercial Colleges) deals with development needs within

vocational teacher training. In addition, work is being done increasingly with research and development activities paid for by the user, within the fields of new qualifications and the development of vocational pedagogics.

Aalborg Universitetscenter (AUC)
Institut for Sociale Forhold and Organisation
Fibigerstræde 1
DK-9220 Aalborg Ø
Tel.: 98 15 85 22

AUC (Aalborg University Centre) works with labour-market research, training sociology and requirements for new employee qualifications, including in-firm staff training schemes.

D

By:
bibb
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Fehrbelliner Platz 3
D-1000 Berlin 31
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Bibliographical references

Kau, W.; Alex, L. et al.
Qualifikationsbedarf im Handwerk
Bundesinstitut für Berufsbildung
Berlin and Bonn: BIBB, 1990, 88 pp.
ISBN 3-88555-412-7

The 1990s are characterized by a further major structural change in vocational training prompted, among other things, by the continuing changes in economic, technological and population trends. The last of these factors in particular, combined with the change in young people's attitudes towards education and training, is leading to a significant shift in the demand for training places. This calls for a high degree of adaptability in the craft sector.
Some suggestions are made for a strategy of adjusting training in the craft sector to face the impending challenges.

Kloas, P.-W.; Neumann, K.-H.
Industriekaufleute im Beruf; Tätigkeitsmerkmale und berufliche Qualifizierung nach Abschluß der Ausbildung
Bundesinstitut für Berufsbildung (BIBB) Berlin and Bonn, 1991, 65 pp.
ISBN 3-88555-413-3

The training of young skilled workers is by no means over when they complete their initial training. Practical experience in the first few years following initial training is a particularly important requirement for the continued development of vocational competence. This analysis shows that the occupation of industrial clerk is one in which the first few years after the completion of initial training make a particular contribution to the further development of vocational competence.

Schweikert, K.
Mangel an Kompetenz
Paper read at the "Entretiens Condorcet" conference in Paris on 18 September 1990
Paris 1990, 8 pages
Bundesinstitut für Berufsbildung (BIBB),
Fehrbelliner Platz 3,
1000 Berlin 31

"Whether a vocational qualification is sought in the labour market depends not only on its vocational content but also - as in commodity markets - on preferences, transparency, mobility, the scope for substitution and the economic situation." Against this background the author interprets recent data illustrating the link between formal qualifications and labour market conditions in the Federal Republic.

Research projects

Entwicklung von Qualifikationsstrategien für an- und ungelernte Arbeitslose sowie für arbeitslose Facharbeiter im Bereich des Umweltschutzes.
Laufendes Forschungsprojekt, im Auftrag der Bundesanstalt für Arbeit
Project leader: Sanfleber, H.
University of Duisburg - Comprehensive University, Department of Technology and the Didactics of Technology, Duisburg 1990 - 1992
H. Sanfleber, Lotharstr. 1,
4100 Duisburg

The initial aim of this research project is to establish precisely what qualifications are needed for the technical aspects of environmental protection. The next step will be to consider what training strategies can be used to reintegrate unemployed skilled and unskilled workers into the expanding labour market in this field.

Berufliche Qualifizierung von Jugendlichen mit (Berufs-) Ausbildungsbeeinträchtigungen
Laufendes Forschungsprojekt
(Dissertation)
Project leader: Buchkremer, H.
University of Cologne, Faculty of Remedial Education, Cologne
Buchkremer, H., Gronewaldstr. 2,
5000 Köln
The aim is to compile a synopsis of initial training models for poorly educated and poorly trained young people and to develop scientifically based training measures, so that generally valid statements may be made on the teaching of social and vocational competence.

Addresses

Soziologisches Forschungsinstitut (SOFI),
Friedländer Weg 31,
D-3400 Göttingen,
Tel. 0551/55854

Wissenschaftszentrum Berlin für Sozialforschung gGmbH (WZB),
Reichpietschufer 50,
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GR

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Pedagogical Institute
Ministry of National Education and Religion
396 Mesogeion Street
GR–Athens

Bibliographical references

Papatheodosiou, Th.
Metavallomenes anagkes se epangelmatikes dexiotites. Erevna pou anatethike apo tin evropaiki koinotita (programma PETRA) sto ITE.
Changing needs for occupational skills. A study undertaken by ITE on behalf of the European Communities (PETRA programme).

Ypourgeio Ethnikis Paideias kai Thriskevmaton/Institouto Technologikis Ekpaidefsis (ITE), Athens 1990, 130 pp. ISBN 960-85014-6-6

The study analyses the technological development policy of Greece, the Greek education system as a vehicle for technological development, and lastly, the mechanisms for assuring the relevance and modernization of education.

Kazakos, G. (ed.)
Anagkes technikis ekpaidefsis stin elliniki viomichania. Trofima pota.
(Needs for technical education in Greek industry. Food and drinks sector).
Syndesmos Ellinikon Viomichanion (SEV)/Institouto Oikonomikon kai Viomicanikon Erevnon (IOVE).
Athens 1990, pp. 179
(IOVE, Mitropoleos 12-14, 10563 Athens, Greece)

This study, the result of the examination of the technical personnel of the food and drinks industry, intends to:

a) define their current status and position in the production process,
b) examine their educational level, knowledge and awareness in the light of current demands,
c) determine their deficiencies in technical personnel and related future needs,
d) examine the education system as a mechanism for generating various levels of technical qualifications,
e) find the difficulties in the demand for technical personnel,
f) define needs for educational services and propose ways for their fulfilment, aiming at a high level of production and the specialization of technical personnel.

Analyses des facteurs critiques quant aux besoins en formation en vue d'une implantation effective du programme COMETT en Grèce.
(Analyses of critical factors in training needs, with a view to the effective establishment of the COMETT programme in Greece)
Commission of the EC, DG V/Employment, Social Affairs and Education.
Athens, 1988 (3 volumes & synopsis), 1-16, 1-236, 1-347, 1-18 pp.
Planet S.A. (Apollon Tower, 64 Louise Reincourt St., GR-115 23 Athens

The aim of this study is to outline the potential supply and demand for manpower in industry and the service sector in Greece, and to evaluate the provision of vocational and technical education in Greek secondary education.

Ongoing research

1. Metavoli ton ergasiakon axion kai technologiki exelixi: sinepeies gia tin politiki ton epicheiriseon kai gia tin ekpaideftiki politiki.
(Changes in work values and technological evolution: consequences for industrial and educational policy.)

Research project undertaken by the Pedagogical Institute attempting to correlate the following parameters:

a) change of values; b) the demand for workforce skills generated by current forms of production ; c) the demand for skills generated by new technology ; d) educational policy

2. Anagkes technikis ekpaidefsis stin elliniki viomichania
(Needs for technological education in Greek industry)
Research project undertaken by SEV (Syndesmos Ellinikon Viomichania) (ESF financing) and assigned to IOVE (Institouto Oikonomikon kai Viomichanikon Erevnon).

The first phase of the research has covered the following areas:

a) textile-industry. Ready-made clothes
b) food and drinks
c) cement industry
d) steel industry
e) metallurgy except iron

The second phase will cover the remaining sectors of industry.

Organizations

ITE (Institouto Technologikis Ekpaidefsis),
Syngrou 56,
11742 Athens,
tel. 9227716, 9226919

IOVE (Institouto Oikonomikon kai Viomichanikon Erevnon),
Mitropoleos 12-14,
10563 Athens,
tel 3220657

SEV (Syndesmos Ellinikon Viomichanion),
Xenofontos 5,
10557 Athens,
tel. 3222929, 3255531

OAED (Organismos Apascholiseos Ergatikou Dinamikou),
Thrakis 8,
16610 Glyfada,
tel. 9942810, 9913453

EOMMEX (Ellinikos Organismos Mikromesaion Metapoiitikon Epicheiriseon kai Chirotechnias),
Xenias 15,
11527 Athens,
tel. 7701369, 7702741

Institouto Ergasias/GESEE
Pipinou 27,
11251 Athens,
tel 8834611-13

E

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iNEM
Instituto Nacional de Empleo
Condesa de Venadito, 9
E–28027 Madrid
Tel. 408 24 27

Bibliographical references

Observatorio permanente del comportamiento de las Ocupaciones 1989/1990
Madrid, 1989, 19 vols.

This ongoing survey of developments in the world of work is a basic tool of information enabling the National Employment Commission (INEM) to gear its management of job-related training, in both qualitative and quantitative terms, to the needs of the labour market. Its comprehensive contents cover the following themes:

1.the state and behaviour of the labour market;
2.the entry into employment of those completing vocational training;
3.technological innovations.

Department of Education, Universities and Research Basque Government
Aproximacion a los perfiles profesionales. Estudio prospectivo en la Comunidad Autonoma Vasca
Vitoria-Gasteiz:Central Publications Service Basque Government, 1990, 101 pp. ISBN:84-7542-751-0

This publication brings together information on the types of knowledge, skill and aptitude likely to be demanded of the various types of skilled worker and professional in the near future.

Department of Education, Universities and Research Basque Government
Estructura y evolución de las ocupaciones en la Comunidad Autonoma Vasca. Analisis de la decada de los ochenta.
Vitoria-Gasteiz:Central Publications Service Basque Government, 1990, 192 pp. ISBN:84-7542-757-X

Set in the framework of the reform of technical and vocational education this study focuses on the current job structure and its likely development in the Basque region of Spain. Following a methodological introduction, Part one describes the working population in different sectors of industry and occupations, looking at types of unemployment and levels of education. Part two looks at employers' recent practice in relation to the creation and provision of new jobs created in their firms and their forecasts regarding the creation of new jobs and of the types of skilled worker/professional needed to fill them.

Fernandez Enguita, M.
Educacion, formacion y empleo en la Espana de los 90
Ministry of Education and Science, Educational Research and Documentation Centre (CIDE)

This comprehensive report on the links between education, training and employment in Spain in the current decade begins by analysing the effects of technological change on skills and qualifications, going on to seek to determine possible trends on the labour market. Its third part discusses the most visible factors among the many that influence inequalities in the face of employment opportunities:sex, age, educational level, region. The last two parts are devoted to vocational training, the first to "regulated" education and training (within the education system) and the second to both regulated and job-related (mainly under the aegis of the labour ministry) training.

Research in progress

Evaluation of an occupational planning model for the Basque Autonomous Community

Its purpose is to analyse the features needed by a model, suited to the realities of the Basque region, defining occupational categories, planning instruments and the time horizon to be analysed. This is the first phase (September 1991) of a wider project concerned with vocational training in the future. The research is funded by the Basque Government's Department of Economic Affairs and Planning

The ongoing survey of developments in the world of work of the National Employment Commission (INEM)

comprises three areas of research, namely the occupational survey, sectoral studies and specific occupational studies. In the area of sectoral studies an analysis is under way, in collaboration with the Directorate General for Regulated Vocational Training of the Ministry of Education and Science, of Spain's various industrial sectors with a view to identifying training needs. The results of these studies, due to be completed at the end of 1992, will help in the compilation of the Catalogue of Official Vocational Qualifications and in achieving INEM's objective of gearing job-related training provision to the current needs of the labour market.

Study of the occupational and training routes followed by graduates in psychology, information science and chemistry and chemical engineering.

These three studies describe the occupational and training routes taken bygraduates in the fields concerned, the training received in the jobs which they have held for the last three years, the levels of skill and qualification achieved and the various professional strategies followed. Due for completion at the end of 1991, these studies were commissioned by the Catalan Government's Department of Education from the Institute of Educational Sciences of Barcelona Autonomous University (UAB).

Survey of vocational qualifications. A database covering 1600 occupations which includes definitions, academic qualifications, options for obtaining vocational diplomas or certificates and the level of training required in the European Community. The Catalan Institute for Training in New Occupations initiated this database in January 1991 and updates it using its own information and that supplied by other bodies.

Institutions

Instituto Nacional de Empleo
c/Condesa de Venadito 9
E-28027 Madrid
Subdireccion General de Gestion de Formacion Ocupacional
Tel.: 5859755, 757, 764
Fax:2683981/82

Among other activities this subdirectorate of the National Employment Commission monitors and analyses the changes taking place on the labour market (labour supply and demand, placements, skill requirements etc.) with the aim of meeting the occupational needs arising as a result of these changes.

Ministry of Education and Science
Unidad "Proyecto de renovación de la Formacion Profesional"
c/Montalban 7
E-28071 Madrid
Tel.: 2326888

Ministry of Education and Science
Subdirección General de Formacion Profesional
Subdirector:Angel Altisent
c/Los Madrazo 15-17
E-28071 Madrid
Tel.: 5325697

Department of Education, Universities and Research Basque Government
Servicio de Estudios y Documentacion
c/Duque de Wellington 2
01011 Vitoria-Gasteiz
Tel.: (945) 247644
Fax:(945) 247644-240013

The Department has carried out a number of studies dealing, in the context of educational reform, with the structure of the education system and with ways of meeting industry's needs in the near future.

Fundacion IESA (Investigaciones Economicas y Sociales aplicadas)
c/Hermanos Becquer 10-1
E-28006 Madrid
Fax:5631886
Tel.: 5636890

In 1987 the Foundation for Applied Economic and Social Research published the results of a study of changing skill requirements in Spanish industry, focusing on the textile and clothing, engineering, vehicle, hotel and banking sectors.

F

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Tour Europe Cedex 07
F–92080 Paris–la–Défense
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Bibliographical references

Dadoy, M.; Henry, C.; Hillau, B.
Les analyses du travail: enjeux et formes [Work analyses: the issues and forms]
CEREQ, Collection des Etudes no. 54, Paris, 1990, 239 pp.

This report on the seminar on methodology for the analysis of individual and collective skills can be used to compare recent theories on the workings of the labour market. It covers the aims and the issues, the systems used in the task and vocational activities and skills. It also contains a bibliography.

Aubrun, S.; Orofiamma, R.
C2F - Centre de Formation de Formateurs du CNAM
Les compétences de 3ème dimension: Ouverture professionnelle?
[Third dimension skills: a vocational opening?]
CNAM-C2F, 2 rue Comté, F-75141 Paris Cedex 03, 1990, 202 pp.

The nature of work is changing, creating a growing need for non-technical expertise in the field of human relations. This is what the authors call "third dimension skills". The study by CNAM attempts to define such skills as a new form of intelligence in work situations. In Part 2, they explore the literature on associated themes: transversal abilities, key capabilities, generic expertise and skills portfolios. They take a critical look at the theoretical fields of work analysis and sociology. Part 3, based on a field survey, proposes a typology of schemes for training in third dimension skills.

Evolution des qualifications professionnelles dans l'industrie: connaissances et travail [Developments in vocational skills in industry: knowledge and work]
L'Orientation Scolaire et Professionnelle, no. 4, 1990, 350 pp., Paris, ISSN 0249-6739.

This is a special issue on vocational skills in industrial production in a climate of automation. In brief, it covers knowledge acquired through work, work in the car manufacturing industry, skills as working ability, the problem of Taylorism, vocational routes and strategies for those involved in automated production.

Cossalter, C.
Renouvellement des qualifications et de la gestion des ressources humaines dans les banques et les assurances [The renewal of skills and the management of human resources in banking and insurance]
CEREQ, Collection des Etudes No. 53, Paris, 1990, pp. 1095.

This report analyses current changes in banks and insurance companies, and then looks at quantitative developments in employment and qualitative changes in job content. Its third chapter surveys the labour market and resource to training, in particular when the aim is to promote job mobility. Proposals are made regarding preplanning for the management of employment and human resources. The annex sets out a list of typical jobs.

Sociologie du travail et codification du social
Thème 1: la codification du travail et des emplois face aux transformations des systèmes de production
[Sociology of work and social coding. Theme 1: work and job coding at a time of change in production systems]
Minutes of the PIRTEM-CNRS seminars on the sociology of work, 1990, 241 pp.
Toulouse: Université Toulouse le Mirail, 5 allée Antonio Machado, F-31058 Toulouse Cedex.

Resource agencies

CEREQ: Centre d'études et de recherches sur l'emploi et les qualifications
9 rue Sextius Michel,
75009 Paris,
tel. 45.75.62.63.
Nicole Mandon, Département Travail et Formation

Commissions professionnelles consultatives (CPC)
Secretariat: Benoit Bouyx
Ministère de l'Education Nationale
DLC1, 109 rue de Grenelle,
75357 Paris, tel. 49.50.10.10.

The role of "vocational advisory boards" is to review developments in jobs and skills and to create, convert or terminate vocational diplomas issued by the Education Ministry.
The members of the boards are representatives of employers, small firms, employees and the authorities.

Observatoire des qualifications et des formations de l'artisanat
12 avenue Marceau, 75008 Paris,
tel. 47.23.61.55.

The aims of the observatory of trade skills and training are to:
serve as a standing body for the analysis of developments in skilled trades;
help to create a new identity for skilled trades, thus generating a force that can bring fresh life into training for skilled work.

Réseau des observatoires régionaux de l'emploi et de la formation (OREF)
Network leader: Mrs Elisabeth Pascaud, Comité de coordination des programmes régionaux de formation professionnelle et de l'apprentissage
142, rue du Bac, 75007 Paris,
tel. 42.22.32.86
Minitel: 3616 - OREF.

The network of regional employment and training observatories is a chain of flexible regional agencies funded by the State and regional authorities. Their aims are to shed light on development in trades and on the training that should be set up to prepare people for those trades.

RACINE (Réseau d'Appui et de Capitalisation des Innovations Européennes)
18, rue Friant, F-75104 Paris
Tel. (331) 40.44.80.20
Fax(331) 40.44.79.72

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By:

AN FORAS ÁISEANNA SAOTHAIR
FÁS THE TRAINING & EMPLOYMENT AUTHORITY

27–33 Upper Baggot Street
Dublin 4
Tel (01) 68 57 77

Bibliographical references

Skill Shortages in the Dublin Area: A Model for Corrective Action and Economic Development. (January 1991) Ed. Tom Casey. Available from Dublin Technology Partnership,
1 Westland Sq., Dublin 2,
Tel. (353)-1-779199, Fax 779355.

This report is a series of seven monographs by specialist institutions investigating skill shortages in the Dublin area.
The sectors covered were Advanced Manufacturing Technology, Business Services, Environment, Financial Services, Public Administration, Quality Assurance, and Tourism. In addition a monograph on employment projections for the region was commissioned along with an overall synthesis report.

Completion of the Single European Market - Training and Development Implications for the Irish Construction Industry (January 1990). The Construction Industry Federation, Federation House, Canal Road, Dublin 6. Telephone (353)-1-977487.

This is a study in two parts: Section A looks at the various European Community Directives which will have a direct impact on the Irish Construction Industry. Section B includes outline curricula which are based on training and development needs identified for each Directive.

Study of the Mechanical Electrical Engineering Industry in Ireland (1988). Gerard Walker and Tom Casey. FAS - The Training and Employment Authority.

The objective of the study was to forecast the changing employment and skill needs of the industry up to 1992. It summarizes information on the industrial profile and key developments in this area.

FSIA - Financial Services Industry Association, Confederation House, Kildare Street, Dublin 2.
Tel. (353)-1-779801
Fax (353)-1-777823.

A. Financial Services Industry Manpower and Training NeedsReport of Focus Group (December 1988)

The main objectives of this report were:

(1) to create greater awareness within the industry about the nature and extent of specialist skills which will be required;

(2) to provide guidelines for the development of a more structured training system within the industry;

(3) to provide information to the educational sector and to the careers advisory services about employment opportunities in the financial services sector.

B. **Manpower and Training Needs in the Financial Services Industry** (June 1989).

This report analyses the identified shortage of specialist skill in the industry and projected serious shortages in the future. Based on analysis of the issues in dealing and fund management, this report outlines the framework which should be in place to provide the pool of specialist skill required in the future.
FSIA continued the analysis of this sector in 1990 and the findings of the Focus Group (1988) were found to be still valid. A short summary was issued in December 1990.

The Over Educated Engineer? James Wickham. Irish Business and Administrative Research, Vol. 10, 1989, pp 19-33.

This article describes where engineers work within the electronics industry, how they evaluate their education and how they perceive their future careers. As such it gives a description of a group crucial to Irish high technology industry. It also raises fundamental questions about the relationship between education and industry.

Research in progress

Evaluation of a Vocational Training Programme for New Entrants to Farming. Researchers: Butterly, P. and Commins, P. Teagasc - The Agriculture and Food Development Authority
The overall objective of this project is to establish the effectiveness of the Teagasc Certificate in Farming Training Programme - a three-year programme comprising formal course work, work experience and projects. Effectiveness is being established by a follow up survey to ascertain:
(1) the extent to which certificate holders have been integrated into modern agriculture since completing the programme
(2) the level of progress made on the home farms 6-7 years after enrolling in the programme. Proposed completion date 1991.

Sectoral Study of the Irish Clothing Industry.
FAS - The Training and Employment Authority has commissioned a major report on the Irish Clothing Industry. It is the first in a planned series of studies of all the major sectors of the Irish economy. The study is being undertaken on behalf of FAS and the Clothing and Footwear and Textiles Industrial Training Committee with the active participation of the Industrial Development Authority. The study aims to analyse the future development of the clothing sector in the context of the Single European Market and other developments, and from this to specify in detail the manpower and training implications.Proposed completion date September 1991.

Manpower and Training Implications of '1992'
The Planning and Research Department of FAS are currently preparing a paper on the manpower and training implications of 1992. The aim of this paper, which draws on existing research in Ireland and Europe, is to present a tentative assessment of the likely impact of the Single European Market on specific sectors of the Irish economy and to highlight the likely trends in employment within these sectors.
Proposed completion date: September 1991.

Names and addresses of relevant institutions

FAS - The Training and Employment Authority, 27-33 Upper Baggot Street, Dublin 4.
Tel.: (353)-1-685777,
Fax: (353)-1-692691.

FAS carries out research into occupational and skill trends and develops certified qualifications and standards for its training programmes.

TEAGASC - The Agriculture and Food Development Authority,
19 Sandymount Avenue,
Dublin 4.
Tel.: (353)-1-688188,
Fax: (353)-1-688023..

TEAGASC is the national agency responsible for providing Education and Training, Advisory Research and Development Services to Irish Agriculture and the Food Industry.

Curriculum Development Unit,
Sundrive Road,
Dublin 12.
Tel.: (353)-1-535487,
Fax: (353)-1-537659.

The Curriculum Development Unit is a research and development organisation which works extensively in the field of vocational preparation and training, and developing courses and qualifications.

National Council for Curriculum and Assessment,
Dublin Castle,
Dublin 2.
Tel.: (353)-1-6796750,
Fax: (353)-1-6798360.

The Council advises the Minister for Education on matters related to the curriculum and assessment procedures for first and second-level education.

NL

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Verwersstraat 13–15
Postbus 1585
5200 BP's Hertogenbusch
Telefoon (073) 12 40 11

Bibliographical references

Grip, A. de. (et al.)
De aansluiting tussen beroepen en functies en de relatie met scholings- en mobiliteitsprocessen
Researchcentrum voor Onderwijs en Arbeidsmarkt (ROA),
Limburg State University The Hague: Organisatie voor Strategisch Arbeidsmarktonderzoek (OSA), 1990. 95 pp., ISBN 90.346.24242 (OSA working paper W 80)

This study charts changes in occupational qualifications and skills on the one hand and in jobs on the other and investigates responses to shifts in the occupational and job structure, notably how training and mobility can be related to changes in occupations and jobs and to the mismatches resulting from these changes. Training and mobility influence one another positively. This is true only of mobility within firms, however;firm- and job-specific training tends to inhibit external mobility.

Hofman, W.A.H. (et al.);
Steijvers , J.R.L. (project leader)
Beroepskwalificaties in de installatietechniek:een kwestie van ondernemen; een onderzoek naar de in-

terne en externe aansluitingsdiscrepanties in de installatiebranche
Rotterdam:Rotterdams Instituut voor Sociologisch en Bestuurkundig Onderzoek (RISBO), 1989. 121 pp., with appendices, illustrations and tables;
ISBN 90.72597.05.2
(Project: Research, Training and the Labour Market in Metals and Engineering)

The OSAM Project (Research, Training and the Labour Market in Metals and Engineering) is concerned with various training issues relating to current and future problems on internal and external labour markets in the metal and engineering industries. It is divided into ten sections, each of which concentrates on one or more aspects of the topic. This publication is the final report on the "mismatches" section, one of the central themes of the OSAM project, and focuses on the external and, particularly, internal labour market. As such it is concerned with skill and qualification problems arising within firms and on the external labour market. The report focuses particularly on installation trades.

Coenegracht, A.M.M.A (et al.);
J.R.L. Steijvers (project leader)
Onderwijs en vakmanschap:een onderzoek naar de kwalitatieve en kwantitatieve aansluiting van het Leerlingwezen, KMBO en MBO op de branches metaalbewerking en installatietechniek
Rotterdam:Rotterdams Instituut voor Sociologisch en Bestuurkundig Onderzoek (RISBO), 1989. 205 pp., with appendices, illustrations, tables and bibliography;
ISBN 90.72597.06.0
(Project:Research, Training and the Labour Market in Metals and Engineering)

The OSAM Project (Research, Training and the Labour Market in Metals and Engineering) is concerned with various training issues relating to current and future problems on the various internal and external labour markets, focusing on problems both within the world of education and training and at the interface between training and work. Technological progress is bringing about rapid changes in the nature of jobs and work and these will need to be reflected in changes in the education system and in training provision within industry. The OSAM project is divided into ten sections;this publication is the final report on the "vocational education" section. Central to the study are the quantitative and qualitative aspects of the flows of students through the apprenticeship system, intermediate vocational education (MBO) and shorter intermediate vocational education (KMBO).

Advies betreffende de certificatie van bekwaamheid en beroepskwalificerende opleidingen
Driebergen:Raad voor de Certificatie, 1990. 18 pp., with appendices and diagrams.

Report and recommendations on the need for a system for the certification of evaluators of quality systems. The paper sets out a conceptual framework and goes on to discuss the need for and the principles and structure of certification, suggesting a plan of action. The paper's content is clarified with the help of diagrams in the appendices.

Visser, K., Wolters, P.F.M.
Zukunftsorientierte Anforderungen an die Qualifizierungspolitik in den Niederlanden
's-Hertogenbosch, Centrum Innovatie Beroepsonderwijs Bedrijfsleven (CIBB), 1990. 10 pp.

This publication focuses on various aspects of problems arising at the interface between training and work, going on to discuss the requirements which training and qualification policy must meet. Several developments are covered, among them the restructuring of secondary education, the restructuring of vocational education, the creation of a coherent system for both young people and adults, training for the unemployed, the reduction of unemployment and the distribution of in-company training courses.

Jong, M.W. de (et al.)
Breed toepasbare beroepskwalificaties in leerplan en beroepspraktijk: een probleemverkenning en begripsanalyse
Amsterdam:Stichting Centrum voor Onderwijsonderzoek (SCO), University of Amsterdam, 1990. VI, 192 pp., with bibliography, tables and appendices,
ISBN 90.6813.282.8
(SCO report 230). Final report on SVO project 8030.

This exploration of issues relating to non-technical instrumental skills seeks to answer three questions:

1. What developments are under way in the area of non-technical instrumental skill requirements in relevant occupational fields in the second phase of secondary education?

2. How can relevant non-technical skill requirements be translated into operational learning targets?

3. How can these targets be incorporated into training syllabuses? To ensure the wide applicability of vocational skills and qualifications the developments affecting skill requirements are considered in relation to job classification systems, selection and recruitment and learning in practical situations.

P

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E DA SEGURANÇA SOCIAL
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Científica e Técnica
Praça de Londres, 2–1.° andar
P–1091 Lisboa Codex
Tel. 89 66 28

Bibliographical references

Carneiro, Roberto
Portugal: os próximos 20 anos; vol. 5:
Educação e emprego em Portugal:
uma leitura de modernização,
Lisboa, Fundação Calouste Gulbenkian, 1988, 323 pp.

This volume deals with the relationship between education and employment in Portugal. After a summary of conclusions and introducing the methodology used, the recent changes in human resources, quality of working conditions, effects of modern technology on employment and the vocational training required as a result are examined. Illustrations are given in an appendix by studying the situations in the electronics and textile industries. The work is complemented by appendices referring to the integrated model for forecasting labour and basic information requirements for the study, with a list of the model's activity sectors, the job areas involved, demographic data and a description of the education system.

Ministério do Emprego e da Segurança Social - Departamento de Estatísticas
«Inquérito às necessidades de formação profissional - 1990/91/92».
Lisboa, MESS. Departamento de Estatística, 1990, 86pp. (Colecção Relatórios e Análises-Estatísticas, 23)

With the object of obtaining up to date reliable information for forecasting the short- and medium-term requirements for vocational and further training, the MESS Department of Statistics carried out an inquiry into the training requirements for the three-year period 1990 - 1992.
The information, according to economic activity and enterprise size, relates to the type of training (training method), jobs and areas of training. Attention was also paid to the types of training required to satisfy requirements as stated by enterprises, the nature of training bodies and also the effect of new technology on vocational training requirements.

Duarte, Manuel J. et al.
O peso das profissões informáticas no emprego e suas perspectivas futuras.
Lisboa, MESS-SICT, 1989, 47p.;
(Colecção Estudos Serie A; 8)

The development of hardware and the increasing potential of software have led to changes in the professional status of computer operators, through both the disappearance of some jobs or re-definition of their content and the requirements of new jobs and, as a result, new duties associated principally with communication and data bases.

In view of this situation the proportion of computer jobs in Portugal and the resultant role of education and vocational training required for these workers has been examined.

Studies in progress

■ **Warning indicators** for regions being restructured - to be prepared by DINAMIA to ensure the early detection of changes and critical regional situations relating to employment and vocational training.

■ **Regions being restructured (Covilhã)** - to be prepared by DINAMIA with the object of ascertaining the consequences for the region of the restructuring processes in respect of assessing the range of measures, including employment and vocational training.

■ **Evolution of qualifications** - to be prepared by CISEP with the object of ascertaining the situation and changes in the balance of the supply and demand of qualifications in the various occupations.

■ **The market for managerial staff and independent specialists** - to be prepared by CESO, again with the object of forecasting inequalities in the supply and demand of skills.

■ **The effect of the Single Market on employment in the agricultural sector** - to be prepared by the rural television centres with the object of establishing possible evolution scenarios in order to facilitate adaptation of the employment and vocational training policy.

GETAP - carries out studies which include: the classification of training areas including the five levels of skill; the relationship between training profiles and professional profiles in current and foreseeable jobs; the organization of curricula in terms of modular structure.

Names and addresses of institutions

Institutions involved in the study of the changes and development of vocational training qualifications:

AECCOPS - Associação de empresas de construção e obras públicas do Sul
Av. António Enes n° 9-5°
1000 Lisboa
Tel.: (01) 53 31 93/4/5/6

CESO - Investigação e desenvolvimento, CRL
Av. Elias Garcia 123-4°
1000 Lisboa
Tel.: (01) 7971133

CIME - Comissão Interministerial para o Emprego
Av. da República n° 62-8° Dto
1000 Lisboa
Tel.: (01) 769361

CISEP - Centro de Investigação sobre Economia Portuguesa
ISEG - Instituto Superior de Economia e Gestão
R. Miguel Lúpi
1200 Lisboa
Tel.: (01) 607091

DINAMIA - Centro de Estudos para a Mudança Social
ISCTE - Instituto Superior de Ciências do Trabalho e Emprego
Av. das Forças Armadas
1600 Lisboa
Tel.: (01) 7932272

Direcção Geral do Emprego
Av. da República n° 62-8° Dto
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Haffenden, I. and Brown, A.
A Study of the New Vocational Qualifications; Interim Findings and Implications for Teacher Education.
Journal of Further and Higher Education Vol. 13. No. 3. Autumn 1989, 13 pp. ISSN: 0309-877X.

A national framework for vocational qualifications has recently been established by the National Council for Vocational Qualifications (NCVQ). The framework focuses, primarily on five levels of qualification each defined and determined by a set of specified occupational competences with related performance criteria.This paper reports on the interim findings of a research study funded by the Further Education Unit, that sought to identify the impact and implications of the implementation of the new framework for vocational qualifications in colleges of further education nationally.

UDACE
Understanding Competence: A Development Paper
NIACE: London. 1989 33 pp.
ISBN 0-900559-90X.
This paper looks at what competence means, assesses the recent development of the notion of competence and focuses in particular on the approach to occupational competence favoured by NCVQ and the Training Agency; and looks at the implications for adult learners and educators, of an education and training system based on competence.

Twining, J.
Guildford Education Services.
Qualifications and VET
EDUCA No. 4. 1990 44 pp.
ISBN 0955-0860.

This EDUCA Guide aims to provide a map of the qualification scene in vocational education and training, surveying the organizations involved in qualifications (awarding bodies, industrial organizations, professional bodies, National Council for Vocational Qualifications, Training Agency), the nature and structure of qualifications, the issues affecting their development, and the relationship of VET qualifications with schools and with higher education. The main emphasis is on the situation as it now is, and as it may be in the 1990s, but in order to understand the present situation it is necessary to know how we got here. It should also be remembered that the majority of the existing workforce gained their qualifications under one of the old systems. Workers over the age of 45 almost certainly gained their qualifications (if any) before 1961. The Guide therefore includes a short section on the history of qualifications in the UK.

Bees, M. and Swords, M.
National Council for Vocational Qualifications.
National Vocational Qualifications and Further Education.
Kogan Page. London. 1990 223 pp.
ISBN 0-7494-0245-8.
The implementation of National Vocational Qualifications is having a profound effect on colleges of further education. Pioneering institutions are now switching to learner-centred, achievement-led ways of working. For this transition to be successful, learning design, delivery and staff-development systems all have to be looked at afresh. This anthology is drawn from the experience of practitioners in the forefront of the new development.

Pursaill, J.
National Vocational Qualifications and Further Education.
Further Education Unit (FEU).
London 1989 30 pp.
ISBN 1-85338-173-X.

The purpose of this report is to provide basic information onstandard setting and NVQ development for selected occupational areas, the context of this and some related issues; accredited NVQs in these areas and, where possible, progress towards further accreditations. Data has been gathered for the following areas; agriculture, business administration and commerce, caring, construction, engineering, hairdressing, hotel and catering, motor vehicle retail and maintenance, retail, travel and tourism, wholesale. The first part of the report describes the standards programme and accreditation and raises some general issues; the second gives details on accreditation for each occupational area.

Fletcher, S.
NVQs Standards and Competence
Kogan Page;
London 1991. 250 pp.
ISBN 0-7494-0365-9.

This book provides an informed overview of the key concepts and issues which underlie the new standards structure. It is divided into three parts; understanding and planning implementation and HelpMenu. The latter is a catalogue of specific factual information ranging from a glossary of terms to a comprehensive list of Industry Lead Bodies.

Research

A substantial programme of research is planned in support of youth training (YT) for 1991/92. The new scheme is designed to provide all young people joining YT with the opportunity to achieve qualifications which are at least at, or equivalent to, National Vocational Qualifications (NVQ) Level II. Each TEC will have a target for higher-level skill training at NVQ Level III and equivalent or above. YT will also continue to offer help to young people with special training needs. There are no longer any formal age-limits to discretionary entry or limits to duration of training.
To meet YT and wider national monitoring needs, a major national qualifications survey is also being mounted focussing on the achievement of vocational qualifications and National Vocational Qualifications/Scottish Vocational Qualifications within the whole labour market.

A strategy for evaluating the standards programme and NVQs
Coopers & Lybrand Deloitte
Completion date: 31 December 1990
Contact: G. Millner(0742) 594505

The project aimed to develop a framework for the education standards and NVQs (the Standards Programme). It aimed to establish what needs to be known to evaluate the standards programme and to identify data which is

available or needed. The project will contribute to the efficiency, effectiveness and value for money of the Employment Department's work to secure a reformed structure of National Vocational Qualifications. Discussions with key institutions involved in the standards programme, including ITOs, ED, NCVQ, SCOTVEC, and awarding bodies in England and Wales were carried out.

Qualifications, skills and training in present day industry.
Dept. of Sociology,
Liverpool University,
Completion date: 31 October 91
Contact: J. Robson (0742) 594215

This project is a qualitative study of the implementation of new policies and practices in relation to training in present day industry. It is being done by a case study approach and is specifically looking at eight large employers and their employees. The research focuses specifically on the changing skill requirements of large manufacturing establishments and what is being done in response. This response will be assessed by interviewing at head office, establishment, department and individual level, particularly focusing on areas of perceived skills-supply problems or change. It is hoped that this will give a unique view of how the same training policies and practices are seen by employers and their individual employees.

Development of national/standard vocational qualifications at levels 1 and 2 in hotel and catering; Hotel and catering training company
Completion date: June 1991
Contact: R. Gent (0742) 593174

The project aims to provide a functional analysis of units to be included towards qualifications of levels 1 and 2. A workplace assessment guide will be produced, indicating the methodology in the work to be used for assessing each of the standards in the workplace

Useful addresses

Training Enterprise and Education Directorate (TEED)
Qualifications andStandards Branch
Room E454,
Moorfoot, Sheffield S1 4PQ
Tel. 0742 75 32 75

Provides information on standards under development if there is no relevant Industry Lead Body.

National Council for Vocational Qualifications (NCVQ)
222 Euston Road
London, NW1 2BZ
Tel. 071 387 9898

Keeps records of what NVQs are available; provides access to the NCVQ database; produces regular NCVQ up-to-date booklet entitled 'Progress to Date'.

Training and Development Lead Body (TDLB)
81 Dean Street;
London, W1V 5AB
Tel. 071 287 9071

The Training and Development Lead Body plays a significant role in guiding the development of vocational qualifications using the National Standards. The major awarding bodies are liaising with the TDLB to devise a range of qualifications of the NVQ/SVQ framework.

Scottish Vocational Education Council (SCOTVEC)
Hanover House,
Douglas Street,
Glasgow, G2 7NQ.
Tel. 041 242 2066

SCOTVEC is an accrediting body as well as an awarding body. In addition to developing exemplary qualifications at all levels, SCOTVEC is looking to build on the TDLB standards to develop new awards.

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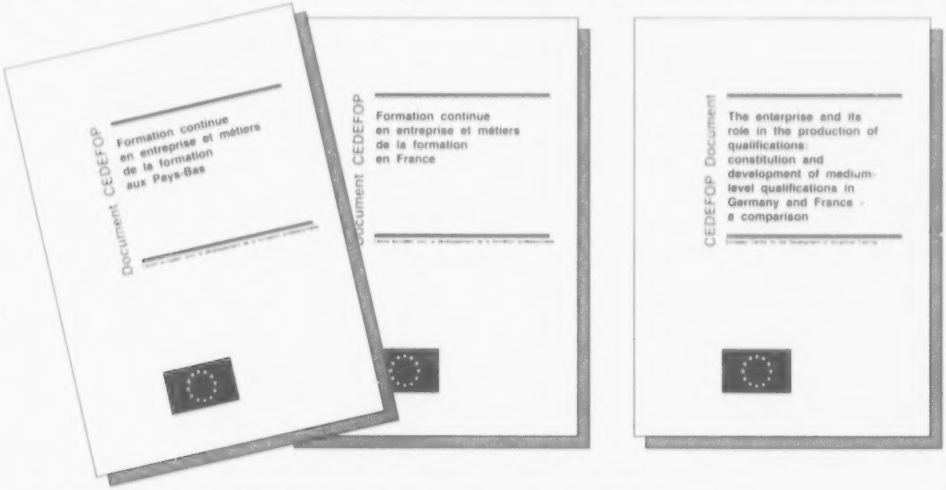
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